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ORIGINAL PAPERS.

INFANTICIDE.

Remarks upon the Subject of Infanticide. By ALFRED S. TAYLOR, Esq., Lecturer on Medical Jurisprudence, &c. in Guy's Hospital.

(Continued from page 367 of the last volume.)

IT has been hitherto my object to determine the extent to which the objection on the ground of putrefaction in the lungs, may influence the results obtained by the employment of the *Docimasia pulmonaris*, or hydrostatic test, in cases of suspected Infanticide. How far I may have succeeded in this, it will be for the reader to determine; but I cannot dismiss this "objection" without endeavouring to expose still further its utter untenableness. For this purpose I will take two supposed cases, upon which the medical jurist may be consulted. The principal facts regarding the generation of air in the lungs during the process of putrefaction having been already stated, it will be unnecessary to revert to them.

In the first of these cases, I will suppose that putrefaction has taken place to a very great extent; that not only the lungs, but every other organ in the body, will float, when immersed in water; that the canalis arteriosus is pervious throughout; and that the foramen ovale is open.* Here, then, the medical witness is called upon to determine whether that child has respired or not. Upon examining the lungs, the air may be observed, as described by Dr. Hunter, dispersed in large vesicles along the fissures and between the component lobuli; yet still, when these organs are submitted to violent compression, it may be found impossible to deprive them of their buoyancy: for vesicles of air may also exist in the internal parenchymatous structure of the organs, and effectually resist all attempts at expulsion. What decision, then, can he come to upon this case? If he refer to the majority of writers on the subject, he will find it stated, that air, generated by putrefaction, is formed only on the surface of the organs; and that, when thus formed, it may be readily forced out by compression. But it will be necessary for him to inquire, previously to founding an opinion upon these statements, how far they correspond with ascertained facts. That air is commonly found upon the surface of the lungs, where putrefaction has taken place, is undoubted; but that it always is found in this situation under these circumstances, or that its distribution throughout the structure of these organs is to be taken as a certain criterion of its origin, is more than doubtful. I presume that the same inference will be allowed to hold with the liver as with the fœtal lungs, where decomposition has taken place to any extent; and I have repeatedly had occasion to remark, in such cases, that central portions of this organ would float as readily as those which were taken from the margin.* Hence the idea of resting our decision upon the particular situation of the air must be abandoned; at least in such an extreme case as *that* which I am now supposing.

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* The reasons for observing the state of these two parts will be more fully explained in the sequel; but I may now observe, that, soon after the establishment of respiration, the diameter of the one becomes diminished, and the other contracted.

The question whether air generated in the lungs by putrefaction can be always forced out by compression, has been already in part considered. On this point Orfila, who is, generally speaking, a most accurate observer, says, "On exprimera les poumons entre les doigts, et l'on verra en les plaçant sur l'eau qu'ils se précipitent dans les cas de putrefaction; tandis qu'ils continuent a surnager s'il y a eu respiration; en effet les gaz, développés pendant la fermentation putride, sont logés dans le tissu lamineux, qui separe les cellules bronchiques et le plus souvent entre la plêure et les poumons: *ou la plus légère pression suffit pour les degager;* tandis que l'air atmospherique, qui distend les poumons, pendant la respiration, occupe les cellules bronchiques et ne peut en être expulsé qu'avec *la plus grande difficulté.*"† Other

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* Air is certainly necessary to the process of putrefactive fermentation; but this, as is well known, is not the only condition. The gaseous elements of which our organs are composed may react upon each other, and produce other gaseous compounds in the central part of an organ, as well as in the exterior. In the latter case, they will distend the investing membranes, and form conspicuous vesicles on the surface; while, in the former, the pressure of surrounding parts may for a time suspend their development, although it cannot prevent their formation.

† Orfila, Médécine Legale, tome i. p. 358.

authors have expressed themselves in the same manner; but the cases from which these conclusions are derived have been generally those in which putrefaction had not very far advanced. No individual has hitherto asserted it to be impossible that putrefied air should ever assume a disposition in the lungs similar to that in which respired air is commonly met with; indeed, it must be admitted that there is nothing in the nature of things to forbid us believing that such may occasionally be the case. If so, what becomes of this pretended criterion to be derived from the expulsion of the air by compression? It must, in so far as *these cases* are concerned, fall to the ground; and, probably, the dogmatical assertions to the contrary have tended in no slight degree to increase that scepticism in the profession relative to the utility of the "test," the foundation of which had already been laid by Dr. Hunter. The impossibility of expelling the air from the lungs, as I stated in my former paper, does not prove that it had really been introduced by respiration, where putrefaction has proceeded to its most extreme degree; for a sufficient number of cases has not yet been collected to warrant any such presumption. Those medical jurists, therefore, who dwell upon the certainty of forming a decision by the simple compression of the pulmonary organs, must be understood as referring to cases in which putrefaction has only commenced.

Here then, having reduced the question to its most simple state, we will now see upon what basis the medical jurist is to rest his judgment. The history of the case may be unknown or purposely concealed, and some female may be awaiting the decision of a coroner's court, as the suspected murderer. The surgeon is called upon to decide whether the child had been born alive; which, as I have stated, in the *legal* sense, signifies to have respired;* and he, taking into consideration all the circumstances above described, cannot but answer, "that no certain opinion could be given; for the putrefactive process had completely destroyed those appearances which might have otherwise afforded a satisfactory solution." Even supposing that his prudence were to forsake him, and he were positively to affirm that the child had lived and breathed after birth, because he had not been able to force out the air from the lungs, what would be the result? His affirmation would only go to warrant the presumption that the child had *not been born dead;* but this alone would not establish the fact of murder against the mother; for she is not called upon to prove that she did not murder the child. Now, supposing that prejudice has operated on the mind of the practitioner, as it but too often does on the minds of the vulgar, he may have been hastily led to depose to the probability of this child having been murdered; but it will be difficult to understand whence he is to draw his proofs, when the female is placed on her trial; for, in order to establish the commission of the offence, he must first shew that it was impossible the child could have died from any other cause than from violence or neglect on the part of the suspected individual.

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* It is remarkable that our law is so frequently contradictory to itself on many points relating to physiological science. Thus, in cases of infanticide, a child is not considered to have lived, unless it can be proved that it has performed the act of respiration; while, in cases relative to the succession, or to the inheritance of property, the most trifling indication of the presence of the vital principle, such as a motion of the lips or a quivering of a muscle, is considered sufficient to prove that the child was born living. In disputed cases of *tenancy by the courtesy*, these nice determinations are very frequently met with. A curious case of this kind was decided in the Court of Exchequer, at Westminster, in the year 1806, in which a Mr. Fishe was plaintiff: it was here determined by the court, that, although the child was stillborn, a tremulous motion of its lips, witnessed by the nurse immediately after its birth, was sufficient to prove that it had lived, and therefore, according to law, the estate reverted to the plaintiff. Now, if a question of infanticide had arisen respecting such a child, the decision of our legal authorities would have been, that it was born dead, and therefore that it could not have been murdered!

It is doubtless from a want of proper attention to this point that many of the acquittals, which take place on trials for infanticide, are to be attributed. The mere proof that the child has lived, is considered to be sufficient to establish the fact of its having been murdered; and a coroner, in nine cases out of ten, will, upon such evidence, commit a female for trial; although it is manifestly as absurd to draw such a conclusion, without strong corroborating circumstances with regard to the body of a child, as with regard to the body of an adult that may be found dead on the highway. It is virtually denying that a child may perish from natural causes, which, as every obstetric practitioner knows, are sufficiently numerous, and are continually operating to destroy a great proportion of those children against whose mothers not a suspicion is ever breathed.

At the Old Bailey sessions, in July last, a woman was indicted for the murder of her child, which was found dead in a watercloset, to which it was proved she was in the habit of retiring. Before the coroner, it had been stated by the medical practitioner who conducted the investigation, that the child had lived to respire. According to the statement of the female on the trial, she was suddenly and unexpectedly delivered on the spot, when the child fell and was suffocated. There was no evidence to impeach her integrity, nor was there any reasonable ground for suspecting that she had committed the offence laid to her charge. The medical witness, upon being questioned by the court respecting the possibility of delivery taking place in such a situation, and rendering the mother incapable of affording the requisite assistance to the child, was, of course, compelled to answer in the affirmative; and the prisoner was instantly acquitted.

If this case had occurred in a distant part of the country, the female might have suffered eight months' imprisonment upon a groundless charge; and, as it was, she was placed like a felon on her trial, to the great injury of her reputation. It is not for me to decide whether, in this case, the fault attached more to the coroner than to the medical witness; but it is evident, if the coroner had done his duty in putting certain questions to the latter, which a proper knowledge of the subject would have suggested, the female would not have been unnecessarily brought to disgrace and ignominy.*

To return from this slight digression. The reader will perceive that two ways are open to the practitioner, to decide upon so doubtful a case as that which I have imagined. If he assert that medical science is incapable of affording a solution of the question at issue, as he undoubtedly would if he had bestowed a proper attention on the subject, he is not exposing the female to any risk of a prosecution on the charge of murder; nor is he throwing discredit upon the employment of the hydrostatic test. Indeed, to maintain the latter would be a downright solecism; for it would be equivalent to maintaining that, because we cannot *always* make use of certain means of investigation, we are never to trust to them; a proposition to which few rational practitioners would be disposed to accede. When we speak of the value of employing certain tests for mineral poisons, we do not call to mind the number of cases in which they have failed to give satisfactory results, because we know that there are numerous conditions which, in spite of all human ingenuity, will cause them to fail: but we dwell upon the cases in which they have been known to succeed, and where it is possible, endeavour to avoid those circumstances to which their failure is to be attributed. This is precisely the course to be pursued in investigations relative to infanticide; and to contend that, because, in either case, these investigations do not invariably lead to *certain* conclusions, we ought to abandon those means which rational experience points out, would be the height of absurdity in reasoning. We should, indeed, be acting the part of the man described by the celebrated Locke, "who would not use his legs to walk, because he had not wings to fly with."

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* It has been recently decided in the House of Commons, that a knowledge of medical jurisprudence is altogether *unnecessary* to the coroner, on the ground that the study of the science would occupy too much of his time, and distract him from his immediate duties. It would be a curious question to determine, whether the time lost by the coroner in this study would not be so much time saved from unnecessary imprisonment to those who have to suffer from his ignorance of the subject?

But I have presumed, on the other hand, that a practitioner may be found who will swear that the child has lived to respire, and inform the court that he has come to this conclusion from the employment of the hydrostatic test. The test is at once denounced, and the conclusion derived from it rejected; but it is not for a moment supposed that any error may have arisen from the want of judgment or from incapability on the part of the individual who has employed it. On the contrary, the hostility of all is immediately turned against the means which have been used; and the practitioner finds himself unable to encounter the cross-examination of counsel. The result is, that the charge is dismissed; but is it possible that such a result can be attributed to the failure of the hydrostatic test? Is it not proper that we should first satisfy ourselves whether unjustifiable inferences have not been drawn from its employment, before we proceed to condemn it as useless? Although the answers to these questions are obvious and satisfactory, there are very few instances in which they have been asked, and, therefore, the answers have escaped observation. Now such cases form a very large majority of those which come before our courts of justice, and hence the repeated failure of what has been regarded as infallible evidence has led practitioners to fly into the opposite extreme; a circumstance which has brought the Docimasia Pulmonaris into greater disrepute than all the arguments of its most violent opponents.

From what has been stated of the case which I have supposed the practitioner to meet with, it will be at once seen that he is justified, neither by experiment nor by observation, in drawing the above inference. If, therefore, in such a case, he assert that the hydrostatic test proves that respiration has taken place after birth, he is asserting more than he is warranted in doing, and, of course, must take the whole responsibility of the result upon himself. But in spite of this obvious conclusion, the principle upon which we have been acting for many years is precisely the reverse. We have universally condemned the means by which the conclusion has been arrived at, and we have not fairly examined the grounds upon which it was founded. If such a course had been pursued with regard to the uncertainty of the tests employed in the analysis of poisons, the science of toxicology would now be, what it was but a few years since, a mere shadow: and as, in every subject connected with medicine, old and unfounded prejudices are rapidly sinking before the light of experience, we may hope that this branch of medical evidence will not long remain in its present unsatisfactory condition.

We have here, then, taken the most extreme view of the "objection" on the ground of putrefaction; but we will now consider that the process has not advanced so far as has been represented. In cases of this description it will commonly be found, where putrefaction has extended to the lungs, that air is collected beneath the pleura in large vesicles, as also that the central portions of the organ are perfectly destitute of air, and therefore sink: although, those taken from near the surface may have sufficient buoyancy to enable them to float when immersed in water.* It is also found that, on compression, these last-named portions may be deprived of their air, and be made to sink. The *canalis arteriosus* must be found pervious, and of equal diameter throughout; the *foramen ovale* open; and the skin of the umbilical cord perfectly continuous with that of the abdomen, presenting around the margin of its insertion no appearance of inflammation or ulceration. What is the conclusion which the medical jurist is justified in drawing from these facts? I presume that not even the most sceptical would hesitate to admit that they clearly prove that the child in question had not performed the act of respiration, and, therefore, according to law, that it had not lived. It might be said the child may have respired, and yet the quantity of air introduced have been so small† as to become readily forced out by compression. This objection, however, could only create any difficulty in the most advanced cases of putrefaction, where the air, generated by this process, is retained within the central structure of these organs; for, in the case of which I am now speaking, the air is supposed to be distributed, as in incipient putrefaction, in large vesicles over the surface of the pulmonary structure, and not in the central portions. Now, if it had been introduced by respiration, it will be found, previous to submitting the divided portions of the lung to compression,

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* I here presume that the lungs are healthy; for it is undoubtedly true that some diseases may harden their structure, after the establishment of respiration, to such an extent as to deprive them of their usual buoyancy.

† Vide page 366.

that the air is not diffused in large vesicles over the surface, but contained in the minute cells of the internal portions; and, moreover, that the condition of buoyancy is precisely reversed; for those taken from the surface will sink, while the central portions will float. Therefore, it will be perceived, even allowing it to be possible that respired air can be forced out by compression, which is of itself doubtful, we have still in our hands means of determining the question.

Those who have argued against the hydrostatic test, as being liable to lead to the condemnation of the mother, when innocent, in bringing forward the above objection have proved too much: for it will be immediately apparent that, in cases of feeble respiration, if we can expel the air, as in cases of incipient putrefaction, without for the present dwelling upon its precise situation, we are led to draw the inference that a child, which may have merely made a single gasp on its entrance into the world, was born dead; in which case it is clear that the mother, so far from incurring a risk of her life, will be acquitted.

It is absolutely necessary, in order to unravel the intricacies involved in this subject, to pursue it through all its ramifications, and to combat the objections as they arise. It is my object, however I may act up to it, to shew not only the advantages, but the disadvantages, which are likely to result from employing this test as a means of investigation; and I am as little anxious to exaggerate its merits, as I am to conceal its defects. Nevertheless, it is impossible to allow idle or unmeaning objections to obscure those points which are really useful, or to give strength to those which are *apparently* defective, when the whole may be proved to be groundless, by adopting a proper method of examination.

Sufficient, perhaps, has been said to develop the nature of the obstacles which the process of putrefaction is likely to offer to the employment of the Docimasia Pulmonaris, as well as to point out the means by which those obstacles may be removed. But, as there is still a collateral proof, which lies open to the medical witness, it will be necessary to determine how far, in the absence of all other evidence, he is justified in relying on *this*. I allude to the test of PLOUCQUET.

In order to understand the nature of this test, we must bear in mind the changes which take place in the lungs by the establishment of the process of respiration. Previous to birth, the pulmonary vessels circulate but a very small quantity of blood through the respiratory organs, the greater portion of the contents of the right ventricle passing directly through the *canalis arteriosus* into the *aorta.*[*] Now, in consequence of the great quantity of air introduced into the air cells of the lungs by the act of respiration, and in consequence of the greater buoyancy which these organs thereby acquire, we are apt to form an erroneous judgment respecting the change which really takes place; we are apt to conceive that they become of less specific gravity than they were originally. So far from this being the case, however, their weight becomes nearly doubled; and this increase of weight they derive from the circumstance of a much larger quantity of blood becoming circulated through them. The increased buoyancy, therefore, is owing to a simple mechanical cause, to the retention of a vast quantity of air in their retiform structure; and so well distributed is this air, that it is enabled to counteract the increase of weight which is brought about by the alteration in the course of the circulation.

The test recommended by Ploucquet is founded on these simple principles. We are to determine the weight of the body of the child, then to remove the lungs from the chest, and, having weighed them, to ascertain what proportion the weight of the lungs bears to the weight of the body. Whatever that proportion may be, it is clear, from what has been above stated, that it will be nearly twice as great in fœtuses which have respired as it is in those which are still-born. Of course, it was necessary that some standard should be fixed by which the result, in either case, might be compared; and accordingly Ploucquet performed some experiments on the subject, and from these he deduced the following proportions: 1st. That where respiration had not taken place, the weight of the lungs was, to the weight of the body, in the ratio of 1 to 70. 2d, That where the act of respiration had been completely performed, the weight of the lungs was to the weight of the body in the ratio of 1 to 35.[†]

It has been objected to these inferences of Ploucquet's, that his experiments were not sufficiently numerous, and that the average was fixed as much too high in the one case as it was too low in the other. It has certainly been proved by the observations of several distinguished physiologists, since his time, that his data were not well founded. Professors **Schmitt**, of Vienna, and **Chaussier**, of Paris, in order to investigate the truth of his positions, undertook a series of experiments on the subject, and the results at which they arrived are, that the body of a fœtus which has respired has rarely so low a ratio as 50 to 1, taken with the lungs; while the body of a fœtus which has not respired generally bears a lower ratio to the weight of the lungs than as 35 to 1.*

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[*] Professor Foderé and others have looked upon the presence of blood in the pulmonary vessels as affording most certain evidence that respiration has taken place, and its absence they have regarded as tending to prove the contrary. Of four stillborn subjects, which I have successively examined, I have found semi-coagulated blood in the pulmonary vessels; and in several, in which respiration had taken place, none was found, owing to accidental causes. This will suffice to show how little reliance is to be placed upon such an appearance.

[†] The weight of the air introduced into the lungs by the process of respiration cannot be considered as adding to the absolute weight of these organs, since they are weighed in air.

During the last summer, I employed this test in four cases on stillborn subjects, and the proportions which I obtained will be seen below.

Weight of the Lungs.	Weight of the Body.	Proportion.
Grs. 640	Grs. 38,400	1 to 60
687	33,847	1 to 53
300	14,400	1 to 48
1950	41,760	1 to 21.

It will be observed, that the three first of these cases correspond very nearly with that proportion which previous calculations had given; but the last is to be regarded as a most extraordinary exception to the rule. The weight of the body of this fœtus was about the common average; and, therefore, the extreme preponderance is to be set down to the lungs; for it will be seen by the table that they were three times the weight of those organs in the two first cases, and six times the weight of those in No. 3. In fact, their enormous size did not fail to strike every observer, and, from their appearance, it was at once concluded that they would bear a considerable proportion to the weight of the body. Such instances, however, of so great a departure from the standard, are to be looked upon as extremely rare, and as altogether insufficient to invalidate the general application of the test.

It cannot be denied that the body of the fœtus is liable to vary in weight, according to the greater or less quantity of adipose substance about it, as also according to its length and its sex: but these variations are confined within a small limit, and the knowledge of the causes from which they may proceed will be sufficient to remove the errors that might otherwise possibly creep into the calculation. It is also worthy of note, that the ratio is exceedingly constant with regard to the fœtus in utero up to the full period of gestation, which shews that there is certainly a strict relation between the development of parts; and if it be not always discovered after the establishment of the respiratory process, we must endeavour to make allowances for its absence, and frame our decisions accordingly.

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* For the tables which these physiologists have drawn up relative to this subject, vide Orfila, Traité de Médecine Légale, tome i. p. 348.

Now, by applying the test of Ploucquet to the cases which we have been considering, we shall, in a great majority of instances, be able to corroborate the presumption which we may have drawn from other facts. Supposing, in either of the cases in which putrefaction has taken place, that we find the weight of the lungs to be, to the weight of the body, in the ratio of about 1 to 50, we are certainly confirmed in our suspicion that respiration had *not* been performed; for the air generated by putrefaction cannot give to these organs any additional weight. This, as I have already stated, must be derived solely from the altered course of the circulation. But, it may be argued, the ratio may turn out to be higher than 1 to 50; it may be, for example, from 1 to 30 or 40, and thus closely approximate to the results obtained by the experiments on fœtuses which *have respired.* This, it is true, is converting the exception into the rule; but, nevertheless, it shall be admitted, for the sake of argument, that a higher ratio is obtained than that which I have above given. What, therefore, is to be the course which the medical jurist ought to pursue in this dilemma? He has, I conceive, simply to consider on which side the error may probably lie, or whether both results may not be reconciled without any great violation of fact or reasoning. In the cases which I have supposed, the latter plan may be safely followed, since a high ratio, obtained by the test of Ploucquet, may by possibility occur in a fœtus which has not respired, as well as in one which has respired; and, although a low ratio might be strongly corroborative of our original presumptions, a high ratio would not militate against it.

Therefore, if, in the examination of a child suspected to have been born alive, we find that the lungs will float when immersed in water, but that they may be deprived of their buoyancy by moderate compression; as also that the air to which that buoyancy is owing is confined to the surface in the form of large vesicles, and not diffused uniformly throughout the cellular parenchyma of the organs: it will matter but little whether their weight be, to that of the body, in the ratio of 1 to 50 or of 1 to 35. In either case, the practitioner will be justified in affirming that the suspicion of the child having respired is unfounded. If he obtain the lower ratio, it will be so far confirmatory of the correctness of his decision, as it corresponds with the general rule; if the higher, it cannot undermine his decision, since it may readily fall within the class of exceptions.

With this, then, I think the objection raised by Dr. Hunter to the employment of the hydrostatic test, on the ground that the process of putrefaction might generate air in the lungs, and might give results precisely similar, may be altogether dismissed. If any doubt should remain in the mind of the reader, let him deliberately examine the disputed question in all its bearings: let him examine the evidence which has been given on trials for infanticide, where this question has arisen: and I do not doubt he will come to the conclusion that the "test" has been most improperly condemned, either from its misapplication by the witness or from the mistaken views which may have been entertained respecting the results to be obtained from its employment.

Let us now turn our attention to another "objection" which has been brought into notice by Dr. Hunter's "Tract." In this it is supposed that a newly born child is found under suspicious circumstances, without any appearances of putrefaction on its body. The practitioner examines the body; he finds that the organs are generally healthy, that the lungs are distended with air, and that, when immersed in water, they immediately rise to the surface, where they remain. Is he justified in pronouncing, under these circumstances, that this child has respired? or are there any artificial means by which the appearances above described may be produced? It will be seen by the following extract from Dr. Hunter's Treatise* that these appearances may be artificially stimulated. Thus, he says, "If the air in the lungs be found to be contained in the natural air vesicles, and to have the appearance of air received into them by breathing, let us next find out if that air was not perhaps blown into the lungs after the death of the infant. It is so generally known that a child, born apparently dead, may be brought to life by inflating its lungs, that the mother herself or some other person might have tried the experiment.† It might even have been done with a most diabolical intention of bringing about the condemnation of the mother."

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* On the Uncertainty of the Signs of Murder, &c., p. 29.

† The experiments of M. Leroy d'Etiolles, the results of which were communicated to the Institute in the year 1826, have thrown a new light upon this subject. His experiments were performed upon young rabbits, puppies, and lambs; and he found that, where the process of inflating the lungs artificially was not conducted with the greatest caution, death almost instantaneously ensued. This result could scarcely be attributed to a rupture of the bronchial cells, for this was but seldom observed to take place. We may hence presume that the very means which the vulgar consider necessary to restore animation may be sufficient to prevent it, unless used with the greatest care.

In making this statement, the Doctor does not appear to have appreciated the difficulty of performing this experiment, and, from the manner in which he has stated it, it seems doubtful whether he ever made the trial. It was, however, well calculated for the purpose intended, namely, to throw uncertainty upon the means employed in the investigation; and, at the time it was first promulgated to the world, it was deemed an unanswerable objection. We will, however, see how the case stands now.

Where the lungs are removed from the body, and a pipe is introduced into the trachea, there will be no difficulty whatever in giving to the lungs the colour, appearance, and physical properties which they are supposed to derive exclusively from the act of respiration. But the conditions are far otherwise in the case of the newly born child; and those who try the experiment will find that there is generally considerable difficulty in causing even a moderate distention of these organs by the application of the mouth to the mouth of the child, even after long-continued efforts. This must certainly be presumed to be the more common mode of its introduction, since it cannot be admitted that the mothers of children, likely to fall under the class of cases imagined by Dr. Hunter, should always be provided with tubes for the express purpose of inflating the lungs. But the question now offers itself, how many of such females are there who can even be supposed to know any thing about an experiment of this nature, much less to be capable of undertaking it at a time when the greatest exhaustion and weakness must necessarily fall upon them? It is, moreover, an experiment which must not be delayed, or otherwise it cannot be performed with any rational hope of success. I presume, of course, that the female is alone and unassisted, and that it is her first pregnancy; for these are the cases which chiefly come before our courts of law. Indeed, to admit that any individuals should be present or assisting her would, in the majority of cases, do away with the substance of the objection; for, under these circumstances, a charge of infanticide is rarely, if ever, brought forward, much less substantiated. Dr. Hunter, it is true, says, "some other person might have tried the experiment:" but let the history of infanticides be read, and it will be found that the presumption is wholly unwarrantable. After very diligent search, I have not been able to meet with a single case which would afford the least ground for making such an assertion. Is it ever put forward in her defence by the female, that the buoyancy of the lungs of the child was owing to her having inflated them artificially? Is there a single instance in which this artificial inflation has ever exposed the life of the mother, or of the supposed accessary, to jeopardy? and, if not, are we compelled to invent for her a defence? Are we compelled to allow that she can execute that which it requires caution, presence of mind, and strength to execute, when we know that such admissions are contrary to all reasonable probability? But although, in one part of his work, the Doctor allows that a female may have sufficient presence of mind and strength to perform this act, in another,* where his inference is drawn for a very different purpose, he supposes that a woman, at the time of her delivery, cannot be under the direction of a "calm and deliberate mind;" but that, on the contrary, any irrational conduct on her part must be justified by the "violently agitated state of her mind," and by the "conflict of passions and terror" under which she must be labouring.

It will doubtless be evident to every reader, that the author of the " Uncertainty of the Signs of Murder" would have better served the purpose for which he wrote, had he first ascertained whether this pretended " objection" had done the mischief which his manner of stating it would lead the world to suppose. As it has stood since his time, it may have served the purpose of enabling a barrister to make a skilful defence for his client, as well as of spreading through both the medical and legal professions a feeling of prejudice against the ordinary means of research; and, until its fallacies be thoroughly exposed, it may still continue to obscure the truth, and to obstruct the stream of justice. The slightest reflection upon the nature of this objection will inform him who has attended to probable or suspected cases of infanticide, that, if it were admitted to have its full value in our courts of justice, it would be most admirably fitted to bring about *the acquittal of the guilty:* but I hope to be able to shew that, even allowing of the existence of this, to my mind, greatest of improbabilities, we are yet in possession of means by which the artful ingenuity of those who have offended against the laws of God and man may be rendered capable of detection and exposure. The assertion that the experiment may have been performed by another party, with the intention of bringing about the condemnation of the mother, is wholly unsupported by fact or reasoning: for it is hardly necessary again to state that the mere circumstance of the floating of the lungs of a child in water does not prove that it has been murdered by its mother: it merely demonstrates that the lungs are distended with air; but we must determine how that air entered into the organs, before we can even affirm that the child has *respired;* and we must render it certain that the child has not died from *natural causes,* before we can affirm that it has been *murdered!*

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* Page 21.

(To be continued.)

35, *Great Marlborough street; November* 1832.

EFFECTS OF MALARIA, &c.

Appendix to "A Dissertation on the Effects of Malaria, and other Malign Atmospherical Influences, in the Production of Febrile Diseases of various Types and Degrees of Intensity." By ANDREW BLAKE, M.D., M.R.C.S., Physician to the General Lunatic Asylum near Nottingham; late of his Majesty's 7th Regiment of Dragoon Guards, and author of "an Essay on Delirium Tremens," &c.

As a malignant species of Cholera prevails epidemically in these kingdoms, and ravages with relentless severity many of our principal towns, it may be well to say a few words concerning its nature and causes. In considering the latter, however, we shall not enter minutely into the much-contested question of contagion; it will, I hope, suffice to say, that we possess abundant proofs of the extensive diffusion of cholera in a manner independent of, and incompatible with, such a mode of its propagation: thus, we see it attack, in the course of a single night, a vast proportion of persons residing in the same district or street; when, as suddenly, the disease will cease, perhaps only to reappear with greater violence within a short space of time, exhibiting evidence of its not having exhausted, during its previous visit, the store of subjects who were predisposed to the disease. This disorder, at least in Europe, is allowed to consist, generally speaking, of three stages: the premonitory, or diarrhœal stage; the choleric, or cold stage; and the febrile stage. It has, likewise, been agreed upon by practitioners, that remedial treatment during the premonitory, or first stage, will succeed, in many instances, in arresting its progress, and in preventing thereby the accession of its other stages. This fact is in itself sufficient to prove that it is not governed by the same laws as those which regulate contagious diseases, properly so called, as we find that nothing can arrest the progress of plague, smallpox, measles, &c.; although their course may be modified very considerably by suitable preparation and treatment; but smallpox, when once induced, will pursue its course to the end. The regularity in the laws of nature, and the dissimilarity in the circumstances mentioned, between cholera and diseases of a decidedly contagious character, dispose me to believe, with Dr. JAMES JOHNSON, that its ordinary mode of propagation is not by contagion; and, in fact, that it is a non-contagious disease, except under contingent circumstances. Cholera has invariably, at the commencement of its prevalence in the various places in which it has prevailed, confined its ravages to the lowest and most unwholesome situations, such as those who are nearly on a level with the sea, the banks of rivers, &c.; such localities being most likely to abound with decomposable matter. Should more elevated situations become the site of the disease, it will be found that they are either immediately within the sphere of action of emanations arising from the places just spoken of, (in which case, they may become even more unhealthy than the lower grounds from which they arose), or they will be found to contain within themselves sufficient materials to furnish malaria.

It has been frequently observed, that not only concave surfaces, but plains which have no direct fall to carry off water, although in very elevated districts, may become, under certain influences, (which, however, we but imperfectly understand,) the source of miasmal exhalations, and be productive of febrile affections of great malignity. This unrelenting scourge seems, likewise, generally speaking, to select for its victims the poor, the sickly, and the profligate, whose blood has been deteriorated by dissipation, bad living, and constant exposure to vitiated air; the effects of which render individuals liable, on the slightest contingent circumstances, to an attack of the disease; while persons in the higher ranks of life are capable of resisting it, until, by their long residence within the sphere of choleric influence, the nervous system, and, through it the functions generally, become impaired, and thence the system predisposed to the development of cholera: under such circumstances, it will be found to attack the rich as well as the poor. This, however, is no proof of contagion, as the long continuance of epidemic causes which are known to be highly sedative and depressive of nervous power, must gradually lower the nervous energy, and with it the vigour of the various secretory organs; the effect of which is, the necessary deterioration of the quality of the blood, and a consequent predisposition to choleric disease. In this peculiar state, a trifling error in diet may be the exciting cause; or, perhaps, exposure to concentrated emanations from diseased bodies may be sufficient to turn the scale of health, and destroy the balance already more than on the turn. In this manner we see how the disease gradually creeps from the hovels of the poor even to the mansions of the great; and how, in proportion to the duration of the prevalence of cholera, it becomes important for persons in the higher ranks of life to live regularly, and to pay particular attention to the state of their secretions and evacuations; observance of these precautions will, in most instances, prevent predisposition to cholera, and hence the occurrence of the disease itself: for it has been stated, and I believe with reason, that no one in health is susceptible of taking the disease; which is, to say the least, not in favor of the doctrine of contagion. Cholera has been observed to force its way through the strongest sanatory cordons, to travel against the trade winds, and even to gain admittance into our own prisons and workhouses: from which places it ought to have been excluded, were it necessary for its introduction that one of their inmates should have been exposed to the contact of a person labouring under the disease. We shall, therefore, take it for granted, that cholera is induced, at least in the first instance, by a modification of the causes which are productive of fever in general: like common fever, it has its premonitory and cold stages, while its third stage often partakes of the congestive form of typhus itself. These causes, however, appear to be developed very gradually, though steadily, in our climate, and to act slowly on the constitution; depressing the nervous power by degrees, so as not to alarm the ganglionic system, and thus, not interrupt suddenly the general functions of the system; although they may, under such influence, be so far deranged as to be unable to carry on healthy secretion, and thereby permit the accumulation of impure principles in the blood. The deterioration of the blood in quality, which is the effect of this inaction in the liver, kidneys, lungs, &c., is productive of impure and irritating secretions from the mucous linings of the stomach and intestines; hence the diarrhœa, which is an effort of nature to purify the blood, by ridding it of its impurities, and is generally the precursor of cholera, properly so called, constituting what has been termed the first stage of choleric fever. At this period of the disease, the fluids have become unfit to support sthenic action, so that any increase of miasmal influence may so overpower the system generally as to render it unable to propel the blood to the surface of the body; and in this way induce general collapse, attended with accumulation or congestion of blood in the centre of the body, with all the symptoms of true blue or Algid cholera, or the second stage of choleric fever. Should the constitution at this critical juncture rally from this dreadful attack, it will be found unable at first to carry on healthy action, and may, therefore, institute remittent efforts to re-establish health; hence the typhoid fever, which in this country succeeds in so many instances to cholera, constituting the third and last stage of choleric fever. In India, the disease manifests generally but one stage, or that which is termed the Malignant Asiatic Cholera, being but seldom preceded by diarrhœa, or followed by fever. The causes in tropical climates are so intense and sudden as to have the power of at once inducing what we call the second stage of the disease; and as the blood has not, in general, been much deteriorated in quality by long and gradual exposure to the causes of cholera, the system is more frequently enabled at once to emerge from the disease into convalescence. Considering, then, that cholera arises, in the first instance, from local or endemic causes, the most natural and philosophical mode of arresting its progress will be immediately to remove, on the appearance of a case, all the inhabitants from the house in which it occurs to a healthy and distant situation, and to keep them there for a given time, until the causes shall have been removed, either by hygienic measures or the exhausting influence of time. Should a particular street or district become infected generally, it would be desirable to remove all their inhabitants by hutting or encamping them, if no better accommodation could be procured; but their removal from infecting influence will prove the surest mode of saving life. Our next prophylactic measure should be to recommend the strictest attention to the mode of living, by taking wholesome and tonic food, and a rigid observance of cleanliness, ventilation, and warm clothing; by these means we ensure the quality of the ingesta. We should then turn our attention to the nature of the egesta: this includes all the secretions and ex-secretions; the principal of which are those which arise from the liver, intestines, and kidneys. It would be presumptuous in me to attempt to give any directions to attain this object; the means are known to all medical men, who are, I am sure, well convinced of the importance of the subject.

Having thus done all that is within our power to prevent the spreading of the disease, we should endeavour to render it less fatal to those who may labour under it; and for this purpose the treatment of this appalling malady ought to be directed with reference to its causes, and their effects on the system. Much may be done in the premonitory stage, by comparatively simple remedies, and throughout the whole course, we shall find that, if we imitate nature in her efforts to combat it, we shall have followed the safest and most rational mode of practice. This is best done by emulging the secretory organs, with a view to the purification of the blood, by allaying irritation, by counteracting congestion, and by supporting the *vis vitæ*, in every sense of the expression, as well by external applications as by internal means. Should emulging the liver and intestines, on which my chief reliance is placed, in conjunction with the other remedial means alluded to generally, not prove sufficient to correct the deteriorated state of the blood, and prevent the supervention of collapse, we may, as a *dernière ressource*, have recourse to saline injections into the veins, although the operation in itself is attended with considerable risk. The theory by which their action is explained is plausible and philosophical, as their operation tends in a direct way to restore the lost properties of the blood. I should, however, fear the consequence of introducing so large a quantity of fluid as has been injected into the veins, without, at the same time, abstracting a proportionate quantity of the deteriorated blood, either by venesection or the application of leeches, lest artificial plethora might be induced, and with it the suspension of many important functions of the animal economy. I regard the introduction of saline solutions into the veins as a more direct method of restoring the properties which chemistry has proved to be deficient in the blood of cholera patients, than the administration of saline medicines through the medium of the primæ viæ, as we are aware that the secretions from these parts already abound with saline matter; indeed, it has been aptly observed, that such practice is only as if we "carried coals to Newcastle," and incapable of having any beneficial influence on the system; the function of absorption being suspended during the state of collapse. I think it may not be useless, also, to call the attention of practitioners to the possible effects of too sudden and too free an application of heat to the surface of the body during the cold stage of cholera, which might induce a sudden cessation of vitality in the capillaries; on the principle of frost-bitten parts requiring the application of snow rather than warmth to restore action in them. We ought also to be cautious in the administration of stimuli internally, lest, by their action on the mucous linings of the stomach and intestines, which are generally in a highly congested state, we excite an action incompatible with their vitality. I shall venture one more observation in the form of a caution: it is against the unsparing hand with which I have witnessed opium given in this complaint. We ought to remember that cholera is the result of sedative causes, and that, as opium in large doses acts as a sedative, we only increase debility and congestion by their administration; on the contrary, in small and repeated quantities opium will prove a soothing stimulus; and hence a valuable remedy in the treatment of this truly "*opprobrium medicorum.*"

As the object of this appendix is only to endeavour to explain the physiology of cholera on the principles expounded in this essay, I have thought it right to confine myself as much as possible to general observations on the subject, and to avoid entering deeply into the minutiæ of its treatment.

Nottingham; November 1832.

TRANSACTIONS OF THE MEDICO-BOTANICAL SOCIETY OF LONDON.

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THE JURIBALI.

REMARKS ON THE JURIBALI, OR EURIBALI, *(so called by the Natives,) a Febrifuge Bark Tree of Pomeroon.* By JOHN HANCOCK, M.D., Fellow of this Society, Honorary Member of the Society of Arts of Scotland, &c.

THIS tree is found in the forests not far distant from the coast. It is small, seldom exceeding thirty feet in height, and eight or ten inches in diameter at the base. It belongs to the eighth class and first order of the sexual system of Linnæus, and to the natural family of Meliaceæ of Jussieu. The calyx is very small, of one leaf, entire. The corolla consists of four petals, lance-ovate, white, spreading. The nectarium is a monophyllous, bell-shaped tube, eight-toothed, bloated or inflate, bearing the stamina in its clefts or notches: this part is described by several authors as the filaments united. The stamina are without filaments. The anthers are eight in number, ovate, erect, seated upon the mouth of the nectarium. The germ is obtusely conic and pubescent. The style is very short, bearing capitate, or rather coronate, stigmata. The pericarpium is a capsule, ovate, one-celled, trivalved, the valves bearing rudiments of septa at their extremities: it contains a single seed, which is roundish, black, crowned with a trifid wing, arillate on one side only; it is veined, and resembles the nutmeg in shape, but is only half its size, with a fleshy albumen and foliaceous cotyledons. The flowers are numerous, on long, lax, divaricate panicles.

Nature has distinguished this tree in a very remarkable manner; for it may be truly said to bear two distinct kinds of leaves, the stipules being, at certain seasons, so developed as to be not unfrequently confounded with the common leaves of the tree, but are distinguished by their shape and position. They are placed in pairs, and scattered along the branches; ear-shaped or rounded and varied, obtuse and petiolate.

The common, or proper leaves, are alternate, oblong, pointed; they are scattered, without much order, on the branches; the petioles are short, compressed, and channelled. The bark is rough and gray externally, and, on peeling it from the tree, the epidermis scales off, and leaves the true bark of a smooth red surface. Its odour is peculiar, somewhat like that of tea-leaves. The wood of the trunk is dense and whitish; that of the branches somewhat coloured, and traversed by a pith in the centre. The seed, crowned with a foliaceous appendage, corresponds with that of the first tribe, Melieæ, of De Candolle; in other respects, to his second tribe, Trichilieæ.*

In respect to the calyx (being quite entire), it seems unique, as all the others of the order are divided or dentate. The structure of the flower, in all other respects, is strictly conformable to the order Meliaceæ; whilst, in the fruit, (a single-seeded capsule,) it agrees with very few of them: in one species only, Trichilia moschata, we observe it noted *Capsulis submonospermis.*

The most remarkable disparity, however, seems to be in the presence of stipulæ, which have hitherto in no instance been observed in this order.

The Juribali, therefore, will be found, I presume, to constitute a distinct genus from any yet described: it so appears,

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* The learned author has this remark on the order Meliaceæ: "Ordo non satis definitus et forsan typos plurimos diversos colligius sed ob descriptiones plurium generum maneas, in statu scientiæ præsenti extricatu difficillimus et botanicis heritis commendandus." Pars i. p. 619.

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at least, by comparing it with the forty-fourth order in De Candolle's Prodromus. The admirable arrangement, conciseness, and precison of this work enables us, at one glance almost, to observe the actual state of the science, so far as it goes, and, when completed, it will furnish an invaluable treasure to the botanist.

The bark of the Juribali gives a deep and lively red colour to water and spirit, in both of which its virtues are very soluble. It is a very potent bitter and astringent; in these qualities much exceeding the Peruvian bark, and will often be found to succeed after the latter has failed to remove an intermittent. I have commonly employed it in about half the quantity I should do for a corresponding dose of the Peruvian bark, to which, in fevers of a malignant and typhoid nature, it appears to be far superior. Notwithstanding its astringency, it does not, like Peruvian bark, constipate the bowels or affect the head, but generally opens the pores of the skin and promotes diaphoresis. To render it still more effectual, it should be taken warm.

More than one fourth the weight of this bark is soluble in water, whilst, according to Fabroni's experiments, the cinchona yields but about one sixth or one eighth. The active principle appears to be readily soluble in aqueous menstrua, and is therefore taken with much more facility than an insoluble woody mass, which passes the throat with difficulty and disgust, and often lies a heavy indigestible load on the stomach. Such considerations may one day appear of more importance than at present, when the prevailing infatuations respecting quinine and the new alkaloids shall have subsided, and given place to the exercise of sober reason and the examination of new doctrines by careful experiment.

I shall here notice the results of a few chemical experiments made on this bark, although I must confess I consider their action to be of very little consequence in elucidating the medicinal powers of any vegetable remedy. Gelatin forms with the infusion a precipitate of a reddish brown colour. Emetic tartar, nitrates of silver and mercury, acetates of lead and of alumina, all throw down precipitates of a light yellow colour; sulphate of copper affords a gray, and sulphate of iron a greenish blue precipitate. The carbonates of potash and soda render the infusion red brown, but form no precipitate. Lime water first renders the infusion green, then deep red, and throws down a copious precipitate of the same colour.

These experiments were made for the sake of comparison, consecutively with others, on infusions of cinchona of more marked sensible qualities, but which I could not refer with any certainty to their species. The results were in some cases similar, in others widely different in respect to the action of reagents; i.e. on the infusion of the Juribali and the cinchonas.

The recent decoction or infusion is of a red colour, but remains turbid for some days. After infusing it for two or three weeks, it gradually assumes a deep red tinge, more transparent, having deposited a flocculent sediment. In this state it gives a durable red colour to stuffs, and precipitates the infusion of galls, which the recent infusion does not.

It hence seems to be probable that, by a combination, or through some slight acidity, the infusion possesses the power of dissolving an alkaline principle, perhaps cinchonine, which is not taken up by pure water, or at least is not indicated in the recent infusion. It might be interesting to ascertain if the sulphuric or muriatic acids would evolve an alkaloid similar to those which are found in certain species of the genus cinchona.

The bark contains a resinoid extractive, which is soluble in boiling water, but not in cold; the decoction, therefore, becomes turbid on cooling, and gradually deposits a red powder. This deposit is soluble in alcohol, and appears to be a simple resin, and not the active principle of the bark; it is insipid when washed in cold water. From this, and some other experiments, I concluded that *cold* water took up the *active* parts as well as hot.

This bark not only cures intermittent fevers, but remittents, also those of a typhoid malignant kind, and those destructive fevers in which the cinchona often does more harm than good. In some measure it emulates rhubarb, being cordial and purgative according to the dose; it is also a powerful diaphoretic, especially if taken warm, by which its value is certainly much enhanced as a febrifuge. I have used it in agues and in the malignant remittent fevers of the tropics, very freely, with the most decisive success, always in the form of infusion, commencing at any time or stage of the fever that may be present. By infusing an ounce of the bark in a quart of hot water, and giving a glassful once in two or three hours, I think it bids fair to be a useful remedy in smallpox and measles.

In a few instances the pulse seemed to be accelerated after its use, but was generally rendered slower and fuller; but I never ascertained the conditions of the patients under which these different effects took place, to my own satisfaction. Before quitting the present subject, I beg leave to allude to an opinion which has long prevailed in my mind, and which may be a novel one, or may not; but I have never heard or seen it adverted to, and, if correct, it may be worthy the candid consideration of the members of this Society and the profession at large.

We must all admit the great value and important advantages derived from the Peruvian bark in the practice of medicine. It is chiefly in fevers that its uses are to be regarded as paramount: but let us consider how far it is entitled to such unlimited encomiums as a febrifuge. It is certainly excellent as a tonic, and, as such, is applicable in the treatment of very many disorders. It affords one of the most efficient means of suspending the returns of the *common* intermittents. I say common, because, in the very malignant and bilious intermittent fevers of warm countries at least, often met with, it does more harm than good; and in the ardent, typhoid, and remittent fevers, and where most danger lies, we find its uses to be the most equivocal, and not unfrequently to produce a fatal metastasis on the brain: and in such fevers, those of the most dangerous tendency, it is rarely prescribed till the fever has subsided, when the skin has become moist, the tongue cleaning, sediment in the urine, &c., before the main remedy can be exhibited; and thus the time must be frittered away in *expectancy*, whilst the disease is making its inroads, until it has worn itself out, and the principle of life perhaps along with it.* When debility is the chief symptom prevailing, and when, in most cases, the danger is actually over, the bark is thrown in, and gets the merit of the cure! Under this view, therefore, it seems to me that its uses are not so strictly what its title of *febrifuge* imports. It is not so much *to drive away* the fever as to prevent its recurrence, when nine times in ten *dangerous* remittent fevers will not recur after once coming to a crisis. A real and genuine febrifuge, I should conceive, is that which not only braces the nerves as a preventive, but which is capable of *driving away* or taking off the febrile paroxysm. Such is the true meaning I should attach to a febrifuge or an anti-febrile remedy and as such I conceive the remedy here recommended to be. But I shall leave the subject to the examination of better qualified judges.

This is, as before mentioned, but a small tree; there is another which grows very large, often confounded under the same name by the Arowaks: it is the Icica Altissima of Aublet. The remarkable large stipula, however, distinguishes the right kind most readily from every other tree which might otherwise resemble it; the scaly cuticle is also a good mark of distinction.

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* Our profession has given too much reason for the satire of Voltaire, when he remarks, that "Nature cures diseases, and the physician assumes the credit."

My experience is chiefly confined to its use in fever, but it may doubtless be regarded as a general tonic, and applicable, perhaps, in most cases as a substitute for the cinchona; externally it is found to be a very useful application to foul and ill-conditioned ulcers, either in powder or decoction.

There is another tree of the inland parts, called Caramata and *Arumari* by the natives, which affords likewise a very valuable remedy, a very bitter bark, which, from many trials I have made in those cases, appears to be equally safe and efficacious in those dangerous typhoid and remittent fevers in which the cinchona is either useless or pernicious, especially when exhibited during the febrile excitement. Being partial to the combination of similar remedies, I have in a few instances, when both happened to be at hand, infused the two barks (Juribali and Caramata) together, half an ounce of each, grossly powdered, to a quart of boiling water, giving the patient a wineglassful of the infusion, kept warm before the fire, once in two to four or six hours, according to the urgency of the case, and it has appeared to me to operate in this way with uncommon efficacy: but no one person singly is fit to decide upon the positive or comparative merits of a new remedy; and I shall, with great pleasure, submit these two medicinal barks, for further proofs and experiments, to the learned members of this Society, together with some imperfect botanical specimens of the trees from which they are procured; and, being soon to return to British Guiana, shall not fail to forward to the Society sufficient supplies* for making the requisite trials of their virtues, being fully convinced that no institution can afford such advantages as the Medico-Botanical Society for proving and fully investigating all the details which are requisite for the complete development of the powers of new remedies, and for deciding on their real or imaginary virtues.

It is only necessary to look at the assemblage at one of the general meetings, or at a list of the members of this Society, to be convinced of the truth of the remark which I have just made. We there behold a phalanx of talent, of the first order of botanists, chemists, physiologists, and the votaries of general science, combining their powers for the purpose of forwarding objects of the most vital importance to our species. To all these facilities are added the great paramount advantage, that many of the learned members, physicians and general practitioners, besides an extensive private practice, are connected with hospitals where numerous patients are under immediate inspection, affording altogether the most adequate means of instantly submitting any remedy to the test of clinical experiment.

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* I have been extremely disappointed of these, and numerous other interesting articles, which were promised to be forwarded from the same quarter, during my abode in England.

It might perhaps be considered invidious to designate any of the eminent members in support of my assertions, I may however observe that I could mention very many names calculated to bestow celebrity, and to strengthen the great and worthy cause in which this Society is engaged. It is sufficient here to mention that the distinguished presidents of the College of Physicians, and of the College of Surgeons, are amongst the number, as well as many others, scarcely less eminent, and, without disparagement, we may say of equal talents. If the old adage, borrowed from the Romans, be true "in union is strength," we can scarcely wish for a better assurance of prosperity, and especially whilst the Society has the further guarantee of success, from the exertions of so zealous, learned, and distinguished a nobleman as presides over it and at present guides the helm; who, without professing the Æsculapian art, is yet deeply read in it, and especially attached to the much neglected, but most important, department of medical botany, and, although not a medical practitioner, yet a practiser of charity, and, I may add, a real friend to the poor and a patriot of his country.

Some may imagine that this is irrelevant to our subject, but I entertain a different opinion. The objects we should hold ourselves pledged to maintain are, and I hope ever will be, the charitable purposes of aiding the poor, and of turning the bounties of nature to the relief of human suffering.

CHOLERA SPASMODICA.

Remarks on Cholera Spasmodica. By John Jones, Esq., Member of the Royal College of Surgeons, London.

The general consternation produced by the ravages of this mysterious disease, since its introduction into this country; the various opinions respecting its real nature entertained by medical men; and the no less various and contradictory plans of treatment recommended, which so prominently occupy the pages of the medical periodicals, sufficiently declare the imperfect and unsettled notions which still prevail respecting it, and how inconclusive have hitherto been the principles which have guided the profession in the efforts to check its progress or diminish its fatality. To reconcile these discordant opinions, and to establish a rational treatment on correct physiological and pathological data, is a desideratum of the utmost importance; and every individual who imagines he has fresh views on this momentous subject is not only justified in publishing them, but is bound by a solemn duty to do so, that the profession at large might judge of their value, and how far they are in accordance with established facts and applicable to practice. With these sentiments, and in compliance with the general invitation of the Central Board to the profession to communicate their individual experience in the treatment of Cholera, I venture to add my mite to the accumulated stock of information already obtained.

In the year 1825, several papers of mine were published in the London Medical and Physical Journal, in which I endeavoured to explain the phenomena of many diseases on the long disputed fact of the blood's vitality. The data on which my arguments were founded were, that the blood possesses vitality; that the vital principle, or *pabulum vitæ*, exists principally in arterial blood; that venous blood is comparatively destitute of this principle, which, before it enters the veins, has been expended in supporting the various secretions, and renovating the perpetually wasting energies of the system; that the vital energies become developed through the medium of the brain, spinal marrow, and nerves; and that the operations of the nervous and vascular systems reciprocally depend on each other, the brain and nerves receiving their peculiar vitality from the blood, and the vascular system being enabled to perform its important functions through the agency of nervous influence.

Upon these physiological facts, which I believe incontrovertible, I attempted to show that many diseases are naturally arranged into two great classes; each, however, admitting of modifications, according to the peculiar constitution of the individual and the exciting and predisposing causes of disease. 1st. Those in which arterial action predominates, which, according to the Brunonian nomenclature, might be called sthenic, and are always accompanied by an augmented and preternatural expenditure of the vital energies. 2. Those of venous congestion, or asthenia, in which these energies are preternaturally depressed.

The accumulated experience we have had of cholera, since its lamented appearance in this country, as well as the testimony of those who have witnessed it abroad, lead to the conclusion that it is a disease emphatically of *congestion*. Post-mortem examinations have invariably shown the large veins of the body to be gorged with black blood, which is also found in the heart, and even aorta; and, for the most part, the brain is remarkably vascular, resembling what occurs in those who have died of apoplexy. This state of the venous system cooperating with the mysterious agent by which it is produced, whether contagion or a peculiar state of the atmosphere constitutes epidemica, suddenly diminishes the vital energies; the abdominal veins, which are destitute of valves, and, according to MAGENDIE, possess the function of absorption, become so mechanically distended by congestion, which is rendered more effective by their diminished tone, that, instead of absorbing the fluid contents of the intestines presented to their orifices, and thus, in conjunction with the lacteals, supplying the system with nutrition, they allow the serum of the blood to percolate through their weakened tubes, and, in an awfully augmented degree, add to the depression of the system; the primæ viæ become loaded with this paricidal fluid, which chiefly constitutes the extraordinary evacuations that occur, sometimes consisting of a clear fluid, exactly resembling pale urine, depositing a sediment, at others having the appearance of thin gruel, whey, or rice-water; the colour and sediment of which most probably depend on the admixture of chyle, and perhaps the fibrin of the blood, which, with the serum, has passed through the absorbing veins so strangely deprived of their functions. The abundance and saline properties of the serum escaped into the intestinal canal are alone sufficient to account for the profuse and frequent discharges. These united causes of depression, connected as they are with venous congestion, and the separation from the blood of its saline and watery parts, amply account for the appalling fatality of the disease, its rapid progress, and all its peculiar symptoms, some of which I proceed to consider.

The reduced temperature and blue colour of the skin. Animal heat depends principally on respiration, although, from the experiments of Mr. BRODIE, which corroborate the opinion of CAVERHILL, a due development of nervous energy would also appear essential to its production. During respiration, carbonic acid, formed by the union of the oxygen of the atmosphere with the carbon of the blood, is evolved; another portion of oxygen is supposed to be employed in the combustion of hydrogen. These processes, in a state of health, are accompanied by an abundant production of animal heat.

The blood in cholera, deprived, by the escape of its serum, of its usual fluidity and saline constituents, which doubtless are essential to the changes produced by respiration, is prevented from receiving the vivifying influence of oxygen; its carbon is, therefore, retained; the arteries, instead of circulating red blood capable of renovating the wasted energies, contain venous or carbonized blood, which, feebly circulating in the capillaries of the skin, produces its characteristic blueness and icy coldness. To this state of the circulation also, accompanied by an accumulation of blood in the large internal vessels, and a proportionate recession from the surface, may be attributed the extraordinary shrinking of the features, sinking of the eyes, corrugation of the integuments of the fingers, and insensibility of the skin, which will sometimes admit of being pinched or pricked without exciting pain, and so completely is the vital contractility annihilated that, when pinched, the folds remain exactly as on the skin of a corpse.

Suppression of the Secretions. This is a remarkable and characteristic symptom: the urinary bladder is generally empty, although bile is found in the gall-bladder, none escapes into the duodenum; the discharges ejected from the stomach and bowels consist principally of serum and are not the result of secretion, which is defective, and therefore not depending, as usually supposed, on morbid irritability of the mucous membrane.

The process of secretion depending on the healthy state of the capillaries of the secreting organs, is suspended in consequence of the accumulated causes of depression, which so peculiarly mark the disease; and, in addition, the blood being deprived of its serum, from whence the secretions are chiefly derived, these must, of course, be suppressed till this anomalous decomposition of the blood is prevented. We find, accordingly, that the return of the secretions forms the best indication of amendment.

Spasms. This symptom seems intimately connected with the diminished energies of the system. It often accompanies the premonitory diarrhœa, and begins with a tingling of the fingers and toes, succeeded by cramps, which gradually pervade the forearms and calves of the legs. In the progress of the disease, the spasms sometimes become dreadful. In a letter I received from my nephew, Mr. THOMAS JONES, who was in Paris during the prevalence of cholera in that devoted city, he says "yesterday, as I stood by the bedside of a man during a paroxysm, the effort of the muscles dislocated the lower jaw." The irregular distribution of nervous influence produced by the sudden and intense operation of the depressing causes is sufficient to account for this symptom.

Mechanical pressure on the nerves, by the congestion of contiguous vessels, might also assist in its production.

A remarkable coincidence seems to exist between cholera and the first stage of typhous fever. In both, the vital energies are depressed by the influence of some unknown agent on the nerves, followed by the sudden production of venous congestions of the large vessels of the body and internal organs. In typhus, this state of depression is usually succeeded by increased action of the heart and arteries, constituting febrile reaction. Sometimes, however, it is so great as to prevent this salutary occurrence, when the action of the heart is enfeebled, the circulation tardily performed, pulse weak, heat of the surface below par, the functions of the internal organs imperfectly performed, and the patient suddenly sinks; or, should reaction occur, it is but feebly developed. The vital energies are remarkably depressed through the whole course of the fever, giving a character to its type, and constituting one of its most fatal forms. In cholera, superadded to the above causes of diminished tone, is the escape of serum from the blood, which sufficiently accounts for all its distinguishing phenomena, its rapid progress and awful fatality. In the letter already referred to, my nephew observes, "So sudden is the invasion of the disease, and so rapid its progress, that, in two hours, in some instances, death has seized his prey; and, even whilst taking down a case from the mouth of an individual, it is evident that every moment is plunging him deeper and deeper into that state of profound collapse from which all exertions are vainly tried to rescue him." Those cases in which amendment occurs are frequently followed by fever, which assumes more or less the character of typhus, and is accompanied with a marked state of organic congestions, particularly of the brain. On the extent of these congestions, and the importance of the organs so affected, the malignancy of the consecutive fever seem to depend.

Without entering into a minute detail of the treatment, I shall consider the *modus operandi* of some of the means recommended for combating this fatal disease; many of which are so totally at variance with each other, that, if some have been beneficial, others must have been equally prejudicial.

Diffusible Stimuli. These have been profusely administered, with the view of rousing the vital energies and producing reaction. Experience has, however, taught us their inefficiency, and there is too much reason to believe that the fatality of the disease has been in some measure proportioned to the confidence placed in this class of remedies, and the freedom with which they have been employed. Their stimulating effects depend on a due development of nervous energy, and perhaps their absorption into the circulation. In consequence of the torpid state of the nerves, produced by causes over which stimulants can have no influence, and the inverted action of the intestinal veins, by which their function of absorption is suspended, they fail to excite reaction, and, by their constringing effects, they tend to retard the return of the secretions so essential to the recovery of the patient.

Opium. To control the morbid irritability of the mucous membrane, erroneously supposed to be the cause of the abundant evacuations, and to relieve the violent spasms which occur, this remedy has been the principal resource of many practitioners, who have considered it their sheet-anchor. As the fluid so copiously evacuated from the stomach and bowels is extraneous, and not the result of increased secretion, although opiates might afford temporary relief, yet, when freely administered, they must retard reaction, and accelerate the fatal progress of the disease, by checking the evacuations and suppressing the secretions. They are only admissible when given in small doses, and conjoined with appropriate aperients.

Saline Injection into the Veins. This remedy, founded on the analysis of the blood, which proved it to be deprived of its serum, was intended to supply this deficiency. The bold suggestion of injecting large quantities of a saline fluid into the veins was speedily adopted, and the profession was astounded by the novel fact that such injections could be made, not only with impunity, but even with effects apparently the most beneficial. Unfortunately, however, these effects were but of short duration: although the serous part of the blood was thus renewed, its escape from the absorbing veins was not prevented; and, although reaction was produced, the dreaded collapse returned with as much, if not more, intensity than if the operation had not been performed. It has been fairly tried three times in this town: in each case, the patient, for a short time, seemed revived, and the symptoms generally ameliorated; but collapse speedily recurred, and terminated together the life of the patient and the solicitude of the practitioner.

Calomel. This invaluable medicine has been found, by almost universal experience, both in Asia and Europe, to be a remedy most entitled to confidence. It not only excites the secretions generally, but has a peculiar effect in increasing that of the liver in particular; it has also a powerful influence on the absorbent system, and seems to have a direct effect in restoring the absorbing function to the intestinal veins. In those cases of amendment treated with diffusible stimuli, as brandy, ether, &c., and opium, with which it has usually been combined, it has doubtless obviated the evils of such treatment, and has been the principal cause of recovery.

Aperients. This class of remedies has not till lately been duly appreciated. Experience has, however, fully established their utility, and they are now considered, by most practitioners, one of their chief remedial resources. They not only favor the evacuation of the serous contents of the intestines, but, by restoring the secretions, relieve the existing congestions, which, by their intensity and *sudden* production, may be considered the principal cause of the inverted action of the absorbing veins. This anomalous state, therefore, aperients have an indirect and powerful tendency to correct, and, in conjunction with calomel, fulfil two of the most important indications in the treatment, the re-establishment of the functions of the secreting organs, and that of the absorbing veins of the intestines. When these most important objects are secured, reaction and convalescence speedily ensue, if the remaining energies are sufficiently great to recover from the shock the system has sustained.

Bleeding. From the extreme state of depression which so peculiarly distinguishes the disease, the propriety of bleeding would appear very questionable, if experience had not fully proved its efficacy. If employed sufficiently early, it has a direct tendency to unload the congested vessels, and thereby to restore the absorbing function of the intestinal veins, and consequently prevent the further escape of serum from the blood, by enabling the heart and arteries to act with greater energy; it also equalises the circulation, increases the secretions, and facilitates reaction. These beneficial results, however, can only be expected when bleeding is employed early; for, should it not relieve the oppression of the system, it must accelerate exhaustion.

External Warmth, Rubefacients, Sinapisms, &c. The extraordinary reduction of temperature which accompanies this disease, naturally suggests the propriety of counteracting it by external warmth, &c. From the preceding pathological views, it is evident that such means are wholly insufficient to effect the object intended, and that we can expect warmth to be restored to the surface only by removing the causes of depression on which the coldness depends. These means, therefore, can be considered but of secondary importance, and must be employed only as auxiliaries to those remedies which tend to restrain the escape of serum from the blood, and remove the existing congestions. When these impediments to the due development of nervous influence are removed, the warmth of reaction generally soon follows, and doubtless is facilitated by the conjoint employment of external warmth, stimulating embrocations, sinapisms, &c.

The following cases illustrate the principles of treatment recommended in the preceding remarks.

Sarah Ryley, æt. twenty-nine. I was hastily called to attend this woman, who, the messenger informed me, was affected with cholera. There appeared a general excitement in the neighbourhood, and, on entering the patient's room, which was crowded with women, found her violently retching; her features remarkably shrunk; eyes sunk deep in the sockets, surrounded with a dark-coloured areola; skin of an icy coldness, dirty brown colour, and nails blue; pulse hardly perceptible, and, on seeing her a short time afterwards, quite imperceptible. Retching and purging had been for the last hour almost incessant: little was vomited, but alvine evacuations were passed involuntarily, and so watery and profuse as to soak through the bed, leaving no appearance on the sheet except a few flocculi. Violent pain in the bowels, and severe spasm of upper and lower extremities. There appeared so much apathy of perception as to deprive her of consciousness. There had been no premonitory symptoms, as, till within an hour of my seeing her, she was as well as usual.

I immediately ordered the women, whose curiosity had so strangely overcome their fears, to leave the room, excepting such as were really necessary to attend the patient. Hot bricks were applied to the feet, and a bladder, partly filled with hot water, to the epigastrium; which, together with the palms of the hands and soles of the feet, was to be frequently rubbed with a liniment composed of a watery mixture of mustard and turpentine; and the following pills to be taken every half hour till reaction occurred, and afterwards every hour; and an emulsion of castor oil every two hours, till the evacuations became feculent: R. Submur. Hydr. gr. ij.; Extr. Colocynth. comp. gr. iij.; Pulv. Opii, gr. ½; Ol. Carui, gtt, i. M, fiat pil. ij.

Before the medicines were prepared, the assistant of another practitioner had accidentally called, and, not knowing what I had prescribed, ordered mustard poultices to the calves of the legs.

After the first dose of the pills, the retching ceased, and in a few hours the evacuations became feculent and of a dark colour, accompanied with reaction and general amendment. The following day she had slight fever, which soon subsided, and left her in her usual health.

I was particularly struck with the altered appearance of my patient when she became convalescent. On first seeing her under the influence of the disease, she appeared at least fifty years old; on visiting her the following day, I was surprised to find her a handsome young woman.

Elizabeth Cutts, æt. twenty-four, the wife of a pedlar, with whom she had travelled three weeks before her present illness, and about six weeks ago was delivered of a child, which she is now suckling, since which her health has been very delicate. The day after, having participated in the public reform rejoicings, she was affected with diarrhœa, which continued till the following morning, when I first saw her. During the night, vomiting and purging had been very violent, and were still unabated; the skin remarkably cold; severe cramps of the extremities; pulse hardly perceptible; tongue cold and exsanguinous; had passed little or no urine since the commencement of her illness; alvine evacuations resembled thin gruel mixed with milk.

The same treatment, with the exception of mustard poultices, was pursued as in the former case, and with the same happy result. In a few hours the motions became feculent and dark-coloured, followed by reaction, when about twelve ounces of blood were taken from the arm: the blood was almost black, with scarcely any serum. In the course of three days she was restored to her usual health, without the occurrence of consecutive fever.

Since last spring, cholera has repeatedly appeared in this town, but its prevalence has not been extensive; the number of cases reported being only twenty-seven, out of which there have been fourteen deaths. After having ceased for about a month, it has again appeared, and, within these few days, five cases have occurred, and three deaths. Hitherto it has been invariably isolated, attacking one individual, and not extending to others of the same house or yard; or a solitary individual has been seized, after having taken indigestible food, and sometimes without any assignable cause. For the most part, the persons affected have been of the lowest class, and residing in the most confined and filthy situations, and in the neighbourhood of water, of which there is great abundance in and about the town. There have, however, been three fatal exceptions to this rule; a lady and two gentlemen of great respectability: the former, the wife of a surgeon, had been in a delicate state of health for some time previously, was affected with diarrhœa, and had a great dread of the disease, which was considerably heightened by her husband having been at the post-mortem examination of a child who had died of it in the course of nine hours. This lady's veins were injected, which produced the usual temporary reaction, succeeded by a speedy return of the deadly collapse, which terminated her existence. Great imprudence in diet seemed to be the exciting cause of the disease in the other two, producing diarrhœa, and then the peculiar choleric symptoms.

It has generally been preceded by diarrhœa, which, during the whole period, has prevailed as an epidemic: in some cases, however, it has commenced with collapse, and terminated fatally in the course of a few hours. The diarrhœa, if attended to sufficiently early, has been easily controlled by the usual means. The circumstances which seem to have had a considerable influence in preventing hitherto the spread of the disease are, 1. The measures adopted by the inhabitants in anticipation of its appearance, which, by means of a very liberal public subscription, were upon a large and efficient scale; nuisances were removed; the indigent supplied with blankets and coals, and their houses well whitewashed. 2. The general cleanliness of the town, which is well built, and not over-populated. 3. The facilities afforded to the indigent and working classes for obtaining prompt medical assistance, not only by means of the General Infirmary, but also by the admirable working of a self-supporting Dispensary, established about two years ago on the principles recommended by Mr. Smith, of Southam. Between fourteen and fifteen hundred cases have been treated by the medical officers of this institution during the last year, many of which were diarrhœa, and there is little doubt, without timely aid, would have become genuine spasmodic cholera.

CRITICAL ANALYSES.

Quæ laudanda forent, et quæ culpanda, vicissim,
Illa prius, cretâ; mox hæc, carbone, *notamus.*—Persius.

Medico-Chirurgical Transactions. Vol. XVII.—8vo. pp. 527; four plates. Longman and Co., London.

The rapidity of communication which now exists, not only from place to place, but from mind to mind, favors that morbid irritability which is getting more and more notorious, to publish cases, essays, and memoirs, on the spur of the moment; for no sooner has a case been witnessed, or an idea conceived, than it is ushered "into this breathing world, scarce half made up," in some one or other of our weekly, daily, and almost hourly periodicals. Time was, when a treatise might be esteemed the fruit of experience, and a book the labour of a life; when consideration was bestowed on opinions before they were promulgated; while now, if they are considered at all, they must be considered after publication, and not seldom, we opine, give their authors, who have printed in a hurry, just cause to repent at leisure. Such is the precocious constitution of the post-haste periodicals of the present day, that, with breathless ardour, sometimes print the beginning of a speech before its conclusion has passed the speaker's lips; and the commencement is thus read by gaping multitudes before the termination has been heard by the listening few: hence, we have sometimes wondered that any materials have been spared at all for the pages of the more staid and slowly-moving monthlies and quarterlies, and especially for those still more tardigradous literary planets whose revolutions occupy an entire year. Yet we do find that these meteors of the day have not entirely consumed the materials which used to be devoted to the support of the more steady burning lights which so long have illumined the sphere of science; and the present volume of the Medico-Chirurgical Transactions affords abundant proof that, if trifles are sent to trifling channels, the more important are reserved for the nobler streams.

The contributors to the present volume are Drs HODGKIN, HALL, and LEE; Messrs. LAWRENCE, COOPER, LANGSTAFF, BARLOW, HAWKINS, WOOD, HEWLETT, BRODIE, TRAVERS, HOWSHIP, SHAW, and EVANS; who have furnished sixteen memoirs, all of them on interesting, and several on very important topics. It would be impossible, within the space which we dedicate to reviews, to analyse the whole of these papers; we shall, therefore, direct our attention chiefly to those which will suffer least by abridgment, and which we conceive are of the most practical importance, contenting ourselves with a reference to the others, which our readers will find well worthy their perusal.

The volume opens with some *Observations on Tumors, with Cases*, by W. LAWRENCE, Esq., F.R.S., President of the Society; in which, after some good general remarks, and an attempt to restrict the meaning of the term "tumor," as defined by Mr. ABERNETHY, to new productions, or, rather, to "accidental productions, either similar to the normal tissues or dissimilar, developed in the cellular or adipous structures, or in the substance of any organ," which "productions are often unattended with any increased magnitude, so that the etymology of the word must be disregarded," the author contends (and we think successfully) against the commonly received opinions that "either the effusion of blood, and its coagulation, and the subsequent organization of the coagulum," or "the effusion and organization of coagulating lymph," or "chronic inflammation," are, one or other, the causes of these morbid states. He says,

"When various explanations are given of any living process, we shall find that its nature is not understood. There can be only one true account of the matter, and when that has been discovered, the others are discarded. It seems to me in the present instance, that neither of the explanations above mentioned offers a satisfactory solution of the phenomena.

"According to either of these views, tumors ought to pass through successive stages, and to present different appearances at different periods of their development. For instance, we ought to find them at first as masses of coagulated blood, or coagulating lymph, and then to observe various degrees of transition from those substances to the textures which characterise the perfect growth. Observation, however, discloses nothing of this kind: tumors, in their earliest state and smallest size, have their peculiar structure as well marked as in their subsequent progress and full development. An adipous tumor, not exceeding the bulk of a pea, differs only in size from one as large as the head. Effusions of blood into the cellular texture from external violence are of daily occurrence: hardly an individual escapes them. If such extravasations could become organised and then form tumors, the latter should prevail almost universally. We see, however, that the blood, thus poured out, either disappears by absorption, or irritates the surrounding parts, and causes suppuration, by which it is expelled. No instance has yet been adduced in which such an effusion has been converted into a tumor." (P. 6.)

The author confesses that he has "nothing to offer in place of the explanations to which he has now objected. It seems to him that the circumstances which determine the production of tumors generally, or of any particular kind of growth, are entirely unknown to us; nor ought we to feel surprised at our ignorance respecting these aberrations of nutrition, when we are quite in the dark as to the mode in which the process is accomplished in its natural or normal state; when we know nothing of the differences in arrangement or operation which lead to the varied results of vascular action; when we are unable to explain how the capillary vessels of one part deposit muscle, of another bone, of a third fat; how one gland secretes bile, another urine, and a third saliva." (P. 9.)

Among the cases here recorded, that of the "*Large Cellular Tumor occupying the Labium Pudendi and Buttock*" is the most rare and the most important; we shall therefore extract the essential parts.

"I was consulted, in the year 1826, by a lady twenty-eight years of age, handsome, very well formed, of fair complexion and light hair. She came into my room with her sister, looking very strong and healthy, and said that she wished to have my opinion on a rupture. She turned aside to loosen her dress, that I might examine the part, and was longer than I expected in making the necessary arrangement. I looked round, expecting to meet with a hernial tumor in the groin or bend of the thigh, perhaps as large as a walnut or an egg, when, to my utter astonishment, I saw hanging from one of the buttocks a mass about twice the size of my head, of which the accompanying drawings exhibit a posterior and a lateral view. It was greater in breadth than the tranverse measurement of the two thighs, which, in a tall and very well made person like this lady, were of good size. The complaint had existed for four years, and had not grown fast during the first two. It had given no pain, and even at present was only troublesome by its weight, bulk, and inconvenient position. It interrupted no function, and did not even impair any; indeed, the general appearance of the patient was that of perfect health and strength. It had commenced at the posterior part of the left labium pudendi, and had extended gradually along the buttock and behind the os coccygis. The tumor was a soft, but not fluctuating mass, and slightly subdivided into large lobes. The skin was loosely connected to it, so that it could be pinched up into large folds: it had become partially excoriated from pressure and friction, and was consequently rather red and rough on the prominent parts of the swelling; but in other respects it was healthy. Some veins of moderate size could be obscurely seen on the surface. The basis was the smallest portion of the tumor, which expanded below into a pendulous mass, rather broader than the two thighs. The basis reached from the coccyx to the left labium, and from the edge of the gluteus magnus to the anus. The greatest circumference of the swelling was thirty-two inches; it was twenty-one inches round at the basis, eleven inches from the latter to the middle of its inferior edge, and eight in the line of the basis from the coccyx towards the trochanter.

"The basis of the tumor was quite moveable on the subjacent parts, but it was of uncertain extent towards the front; that is, I could not determine how far it reached inwards beyond the labium, or towards the cavity of the peritoneum. The patient said that her medical attendant had thought it was a rupture, and I therefore examined carefully whether any impulse was produced in it on coughing, or whether the swelling was continued along the side of the vagina. These points were not clear, but the absence of the symptoms which a protrusion large enough to form such a swelling must have caused, sufficiently disproved the notion of rupture. The propriety of taking another opinion having been suggested, this lady consulted Mr. Wardrop, and we determined that the disease ought to be removed, as we could discover no connexion with any internal part, although we could not trace the boundary of the growth satisfactorily towards the labium and vagina.

"I removed the tumor on the 9th of September, 1826, making two incisions, one on the outer, and the other on the inner side, and detaching integument enough to cover the denuded surface after the operation. The skin was easily separated, and the base of the tumor was readily detached from the parts beneath, its situation being quite superficial, so that merely a few fibres of the gluteus magnus were exposed. But the anterior portion, which advanced into the labium, could not be eradicated; it passed inwards along the side of the vagina, on which there was an evident drag, when this part was pulled: I therefore cut it through. The part thus divided was tough, with a compact fibrous structure, and a light reddish-grey colour. There was free bleeding from numerous vessels of various sizes, which I did not stop to tie, and a large quantity of blood was lost, when the patient became very faint, and the hemorrhage ceased, so there was no necessity for ligatures. The edges of the incision were brought together by eight sutures, and the wound was thus as completely closed as the thickened state of the skin detached from the tumor would admit, when the patient was put to bed in a very faint state, in which she continued till night. She, however, spoke and looked very well, so that I could entertain no apprehension about her, although the pulse at the wrist was barely perceptible. Two grains of crude opium at bedtime." (P. 11.)

Some slight constitutional disturbance followed the removal of the tumor, which, however, was easily subdued, and on the 23d the patient left town; the wound being then nearly closed.

"The tumor consisted of a fleshy mass with a somewhat elastic feel, approaching nearly to fluctuation: its substance undulated and trembled when pressed or moved. On cutting through it, the texture was found nearly uniform throughout, being rather more compact on the prominent part, where it must have suffered pressure in sitting and lying, and have partaken of the irritation which had caused excoriation of the surface. Its tint was reddish grey. Its structure was tough and fibrous, and consisted of condensed cellular tissue entirely free from fat. It was left during the night in a large dish, and in the morning a very considerable quantity of fluid had escaped from it. This was not subjected to chemical analysis; it is therefore merely a conjecture that it may have been similar to the fluid frequently found in the interstices of the natural cellular tissue.

"This lady, who had regained her strength rapidly after leaving London, and had continued in perfect health, paid me a visit on the 13th of March, 1827, when I examined the cicatrix and found the part quite sound. The skin, which had formed, on its separation from the tumor, large thick folds, had shrunk considerably, so that the natural outline of the buttock was nearly restored. The entrance of the vagina was natural, and nothing like return of swelling could be discovered on introducing the finger. Soon afterwards she married, and I did not see her again till the spring of 1828, when she was far advanced in pregnancy, and had experienced a considerable reproduction of the tumor. It distended the loose skin left from the operation, filled the left labium at its back part, and could be felt through the vagina as a kind of cord ascending towards the pubes. She went through her confinement very well, aud I removed the swelling again on the 1st of August, 1828. The anterior prolongation was carefully traced on this occasion: it ascended along the left side of the vagina, becoming gradually smaller, and seemed to pass under or behind the arch of the pubes. As I was putting it on the stretch to trace it to its termination, it suddenly gave way, and I found that it had tapered quite to a point, the end appearing entire, as if the whole morbid growth had come away. The part removed was equal to about one third of the mass formerly extirpated, which it exactly resembled in structure. The edges were brought together by sutures, and the wound was covered with cold damp cloths. The healing went on rapidly, and the patient was able to return to the country on the eighth day. There has been no reproduction of the swelling."* (P. 15.)

The second paper contains the report of a very interesting case, and it is so short that it will not need much abridgment.

Some Account of a Case in which the Left Femur and the Fifth Rib on the Right Side were fractured in consequence of Disease, the Bladder being at the same time in the state of Carcinomatous Ulceration; with Observations. By SAMUEL COOPER, Professor of Surgery in the University of London, &c.

"On the 10th of November, 1831, I was desired by Mr. Blair, a surgeon in Great Russell street, Bloomsbury, to visit C. Askey, aged sixty-three, a gentleman's coachman, in Montague mews, Russell square, who had been for several months afflicted with severe pain in the left hip, pelvis, and loins; continual uneasiness in the glans penis; and frequent inclination to make water, which came away with difficulty, and sometimes blended with a considerable quantity of blood.

"About half an hour before I saw the patient, a loud snap was suddenly heard by his wife and daughter in one of his limbs, as he was turning himself in bed, and he was immediately seized with excruciating pain in the left thigh. On taking hold of the limb, I distinctly felt a crepitus not far below the trochanters; the limb was retracted; and it was manifest that the broken part of the bone was surrounded by a swelling, characterized by a remarkable degree of hardness.

"Long sufferings, and frequent returns of profuse hemorrhage from the bladder, had already reduced the patient to extreme emaciation and debility. The pulse was 130, irregular, and feeble; and the appetite entirely gone. Under these circumstances, conjoined, as they plainly were, with some organic disease of the bladder or kidneys, I applied splints to the broken femur, without any expectation of amendment of the health or cure of the fracture. That the bleeding and disturbance of the urinary organs were not produced by a calculus in the bladder was certain, because the quantity of blood in the urine was too copious to proceed from such a cause: the hemorrhage and pain had never been increased by exercise, nor even by the employment of driving a carriage; and, excepting at periods when blood came away, the urine was perfectly clear. The sound had also been introduced into the bladder several times, without detecting any calculus in it. After I had attended the patient a few days, the bleeding ceased, and the urine became natural and transparent; but a profuse hemorrhage commenced again on Sunday, November 20th, and he expired at ten o'clock the same night.

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* "In the course of the last year, a tumor of considerable size, exactly similar in structure to the foregoing, was removed from the left labium pudendi of a female, between twenty and thirty years of age, in St. Bartholomew's Hospital, by my colleague, Mr. Earle. This growth had formed and increased slowly, and without pain. It was loosely connected to the surrounding parts, except at its upper end, where it adhered more firmly by a kind of tough fibrous prolongation, which was cut through in order to detach the mass."

"On opening the abdomen, a particularly hard mass presented itself on the fundus of the bladder, directly behind the os pubis; so hard, that the gentleman who first examined it with his fingers supposed it to be a calculus. This indurated substance was found to constitute the base of a considerable fungus, situated upon the inner surface of this part of the bladder, and exceeding a crown piece in diameter. It was from this fungus that the copious bleedings had taken place from time to time, during the last five months of the patient's life.

"When the chest was examined, the fifth rib on the right side was found to have given way near its central part, the ends of the broken portion being at the same time involved in a scirrhous substance, which had quite as indurated a feel as the hardest kind of cartilage.

"The femur was surrounded at its broken part, and also for some extent above and below the fracture, with a mass of the same kind of morbid tissue already specified, which here formed a thick protuberance, increasing very much the deformity noticed about the hip directly after the occurrence of the fracture. The consistence of this tumor was rather softer towards the bone than more superficially, and from that part of it which lay near the fracture a reddish-brown thick fluid oozed out. The greater portion of it, however, was peculiarly firm, and thickly interspersed with innumerable fragments of osseous matter.

"As the patient had never complained of pain in the situation of the diseased and fractured rib, the discovery of such mischief was completely unexpected.

"The bladder contained about six ounces of turbid brown urine, and nearly as much coagulated blood.

"All the absorbent glands in the neighbourhood of the abdominal aorta were enlarged, (some of them to the size of a pigeon's egg,) and converted into the same kind of scirrhous substance observed around the fractured bones. * * *

"Some differences of opinion may exist about what name ought to be given to the tumor connected with the femur. The disease could not be regarded as fungus hæmatodes or medullary sarcoma, the hardness of the morbid tissue being too great, and the general intermixture of osseous matter with it constituting, perhaps, another difference. Besides, if it had been of this nature, the disease of the bladder would doubtless have been of a corresponding character; but this was not the case, for, though the ulcerated, fungous state of the inside of the fundus of that organ was of long standing, it did not form a large projecting mass, as happened in some other well-authenticated examples of fungus hæmatodes of the bladder, and especially in that published by my friend, Mr. Langstaff, in the eighth volume of the Transactions of this Society, p. 279. Neither were the fungous granulations connected with any soft, pulpy, medullary mass, but situated upon a particularly hard substance, which constituted their base. According to my views, this affection of the bladder must be deemed cancerous; and, if this inference be correct, may we not conclude that the tumor which grew round the femur, and led to its fracture, was of a similar nature: for it can hardly be doubted that the various forms of disease in this patient had a common origin, from some peculiarity of constitution with which they were essentially united? The fact of the absorbent glands in front of the spine, from the pelvis to the diaphragm, being all in a completely scirrhous state, seems to corroborate these observations.

"The indurated mass surrounding the broken femur was not continued from the medullary texture, nor in any way directly connected with it: yet this texture, when a longitudinal section was made of the bone, was found altered from its natural appearance, even as high up as the cancelli of the head of the femur, and also to the extent of two inches below the fracture. Throughout all this track, it was much paler than the healthy continuation of it lower down, and filled with pus. The boundary line between the healthy and diseased portions of the medullary texture is still completely manifest in the preparations now in my possession."

Mr. LAWRENCE'S "*History and Dissection of a Case in which there had been Dislocation of the Ankle, with Fracture of the Fibula;*" Mr. LANGSTAFF'S "*Case of Polypus of the Uterus;*" and Dr. HODGKIN'S Essay "*on some Morbid Appearances of the Absorbent Glands and Spleen,*" we shall leave for private perusal, and make our next extract from Mr. BARLOW'S "*Case of Fractured Spine,*" as it affords an illustration of an important point of practice.

"A man, twenty-eight years of age, whilst wheeling a barrow filled with gravel, was knocked down by the sudden falling of a tree, which some men were hewing; it struck him on the back, and fractured his spine. He was immediately conveyed to Writtle workhouse, where I visited him soon after his admission, being the surgeon of the establishment.

"I found him quite insensible, and he appeared almost lifeless. On examining the course of the spine, I discovered an angular projection in the situation of the last dorsal and first lumbar vertebræ.

"In a short time his powers rallied, but he was still faint, and his legs were completely paralysed. A small quantity of brandy and water was given.

"It seemed evident that the fractured parts were compressing the medulla spinalis, which induced me to attempt to place them in a more favorable position, by employing gradual extension. This was performed by persons pulling at the superior and inferior extremities, which had the desired effect; for the angular projection was greatly lessened, and the patient did not seem to experience any pain during the extension. He was placed horizontally on a firm mattress.

"The day after the accident, he complained of much pain, and of a burning sensation in the situation of the injured part. Leeches were applied, and afterwards an evaporating lotion with opium, which afforded great relief. The bowels and vesica not having been relieved from the time of his admission into the workhouse, the urine was drawn off, and a brisk purgative given.

"What appeared very singular in this case was, the absence of febrile action, and of the symptoms denoting inflammation of the theca vertebralis; yet the lower part of the body was paralysed, and deprived of sensation. The urine was drawn off twice a day; his bowels were obstinately costive, and required active purgatives, such as croton oil, to relieve them.

"In this miserable state he continued about eight months, when sensation began to appear in his thighs and legs, and, with the assistance of a rope fixed to the upper part of the bedstead, he managed to raise himself in the half-bent position, without exciting the least sensation of pain in the spine.

"Hopes were at this time entertained that the case would terminate favorably, notwithstanding the serious injury which the spine had sustained.

"Although the sense of feeling in his inferior extremities improved, there still continued a want of power in the abdominal muscles and bladder. There was great difficulty in keeping his bowels open; but he would relieve the bladder by pressing with his hands firmly on the hypogastric region.

"After twelve months' confinement in bed, he was able to bear the fatigue of being carried down stairs, and of being drawn about in a chair in the open air.

"A few months from this period, he was attacked with a violent cold accompanied by fever, and was again confined to his bed; the integuments covering the left heel became inflamed, and sphacelation commenced. The febrile symptoms, however, subsided, and the integumental parts which had been destroyed by sloughing, were gradually repaired. But, although he recovered from this attack, his health began to decline; pus was voided with the urine, his bodily powers gradually diminished, and the integuments covering the sacrum became gangrenous, although great care had been taken to prevent such an occurrence.

"For fifteen days previous to his death, he had suffered from incessant vomiting, and his stomach scarcely retained sufficient nutriment to support life.

"*Dissection.* The injured portion of the spine having been removed, and the soft parts dissected off, a longitudinal section of the vertebræ and intervertebral substances was made, in order to show the changes which had been effected by the accident.

"The theca vertebralis was thickened, and of a darkish-red colour: the medulla spinalis was greatly softened, and diminished in size near the fractured part of the spine. The first lumbar vertebra had been fractured in a transverse direction, extending obliquely downwards and forwards through the upper third of its body. The upper part of the vertebral column, together with the upper fragment of the fractured vertebra, had been thrown forwards, the superior fragment resting on the fore and upper part of the inferior fragment, to which it was connected by callus. The corresponding articular process of the last dorsal and first lumbar vertebræ had been dislocated; those of the former having been thrown upwards and forwards. On the right side, the inferior articular process of the last dorsal vertebra was separated from the corresponding processes of the first lumbar, to the extent of the third of an inch; while their surfaces were rounded and nearly obliterated, in consequence of the length of time the patient had survived the accident. On the left side, the processes were about the same distance from each other, but connected by an intermediate portion of new bone. The foramen between the roots of the spinous processes was more than twice its natural dimensions. The ligamentum subflavum must have been ruptured.

"The most important point in the change which was produced by the accident consisted in the altered dimensions of the vertebral canal: immediately behind the line of fracture, it was diminished one half in calibre, and it is probable that the medulla spinalis projected in some degree through the enlarged opening between the spinous processes.

"The infundibula and pelves of the kidneys were dilated with urine mixed with pus; their internal surfaces were inflamed, as was the substance of the kidneys. There was a considerable quantity of urine and pus in the bladder, and its coats were thickened.

"According to Sir Astley Cooper's observations, patients with fractured lumbar vertebræ die within a month or six weeks; but he knew of one patient who lived two years, and then died of gangrene of the nates.

"In Mr. Samuel Cooper's Dictionary of Practical Surgery, in the description of fractures of the vertebræ, it is stated that any attempt to set fractures of the bodies of the vertebræ, even where they are known to exist, would be both useless and dangerous. In the case which I have described, it is evident that deviating from the general maxim did not produce any bad effects.

(To be continued.)

A Treatise on Inflammations; explaining their Pathology, Causes, Consequences, and Treatment, with their Effects on the various Textures of the Body. Being an Extension of a "Dissertation on Inflammation of the Membranes," to which the Jacksonian Prize, for the year 1828, *was awarded by the Royal College of Surgeons in London.* By GEORGE ROGERSON, Surgeon, of Liverpool. Vol. I.—8vo. pp. 459. Longman and Co., London.

THE Jacksonian prize having been awarded by the London College of Surgeons to Mr. ROGERSON, for his "Dissertation on Inflammation of the Membranes," he has judged it improper to permit his successful essay to stand alone the memorial of his authorship, and therefore, the statue being already wrought, he now seeks a pedestal on which it may be raised to a more commanding height than if left among the herd of treatises that issue daily from the press, and to which an individuality seldom is conceded, how distinct soever they each may be.

Hence has sprung this "extension" of an especial essay into a general "Treatise on Inflammations," of which the first volume, containing the "principles of inflammatory disorders and diseases," is now before us; and the second, to be devoted to the "pathology, causes, consequences, and treatment of the inflammations of the different textures of the body," is promised to be forthcoming shortly.

We rather expect that the second volume, from its table of contents, which accompanies the present, will be more to our liking than this first: for, however necessary a "history of opinions on the nature of inflammation," traced from the earliest epoch of our art to the present day, the "general principles of medicine," &c., may be to the author's design of beginning with the beginning, and raising his treatise from the foundation, still it is anything but interesting to the general reader, who has read the same matter over and over again, and often repeated in scarcely changing words. But, letting our distaste for these preliminary formalities pass, we readily declare that the introduction is written in a vivid style, and as much appearance of novelty as possible is given to the oft-told tale.

Mr. Rogerson is absolutely intolerant of ancient theories, the "*muscæ volitantes* of fruitful imaginations," not considering that such systems, however devious their course might be, still led the student up the steeps of science by a winding path, when infant philosophy was too weak to breast the hill, which now, even in maturity, all find it difficult to climb.

Our author very vigorously attacks the abstract *nature* of HIPPOCRATES, the *vis vitæ*, and the *Archæus;* but, while demolishing these Dagons of medical idolatry, he seems to us to be raising another golden calf in Bethel or in Dan. The fiery spirit of inflammation is said to be the sole source of all our ills; and, as cold is defined by philosophers to be the absence of heat, so here it would almost seem that health should only be regarded as the absence of disease.

We quote the opening chapter.

"Inflammation, affecting one or more of the various textures of the complicated machine of life, so changes their healthy structures as to become the parent of all our maladies, and frequently 'brings death into the world.' To its ravages, which proceed with more or less celerity on those important viscera whose natural organization is necessary to the preservation of existence, the great majority of mankind fall a deadly prey; while the remainder of our race, equally its victims, are conducted to the tomb, by quick or slow, but certain steps, through its blasting destruction of those parts which are of minor importance to vitality. Of all 'the numerous ills that flesh is heir to,' it is the first cause; and having once begun its baneful actions on the structures of the body, and established them, without being molested in its course, it proceeds, guided by fixed laws, from bad to worse, sometimes suddenly and violently tearing up the foundations of health, and sometimes gradually and silently sapping them, till it lays the noble edifice of life in ruins. It is also the cause of those more numerous minor ills, which, if they do not destroy life, embitter its hours, by giving occasional pangs, disturbing the general serenity of man's days, exciting petty irritations, or creating slight disorders of some duration. Pathology establishes these truths, and shews the origin of disease to be inflammation alone, by exhibiting its destructive work, and tracing its progress and effects on the various textures of which living bodies are composed. Morbid anatomists, then, are the painters of its deeds, and their descriptions present only so many pictures of its effects.

"Examine all the local changes of a diseased part, and trace their stages! The first stage will present a greater or less deranged state of the blood, capillaries, absorbents, nerves, and peculiar matter of the affected texture, with disordered actions of their powers and functions. This is inflammation. Sooner or later another stage succeeds, with violence or mildness, exhibiting striking alterations in the secretion, formation, or nutrition of the part, or its destruction. These are so many consequences or diseases of inflammation. The constitution is associated with these local changes by means of the systems. This is the fever of inflammation.

"Indeed, in all the different varieties and stages of diseased changes, observation of the natural processes will detect inflammation under some form or other: and, if tested by the spirit of experimental philosophy, all the diseased states under which texture and the constitution have ever existed, may be produced by inflammation artificially excited. Science, then, must approve of such an application of her laws, and acknowledge the simplicity of system founded upon it." (P. 1.)

Such is the design of this treatise, and such the basis on which the "general principles of medicine" here advocated stand. The whole of these principles we confess that we do not understand, and the correctness of several we think should rather have been proved than dogmatically assumed: take, for example, the two first.

"1. Matter is generally said to be of two kinds, living and dead; it is probable, however, that all masses of matter are only different modifications of each other's atoms, which consequently possess the same general properties; and there is no matter without power, nor power without matter.

"2. Living matter possesses sensation and motion." (P. 39.)

Does *all* living matter possess both sensation and motion? That the ancients often erred in considering diseases idiopathic which modern research has shewn to be rather symptomatic of local disorders, we willingly allow; but before these topical sources, these "*fontes et origines malorum*," were discovered, we think they erred on the safe side; erred far less than many modern pathologists have done, who would make the brain, the lungs, or the bowels, the sole original seats of fevers, which our forefathers, not knowing of any especial organs to which they could be attributed, considered general or constitutional in their primary states, and named them idiopathic. Hence we must contend that the "16th principle," although it *may* be true, has not yet had its truth established; and from the 20th we entirely dissent.

"16. There is no fever without some local malady, and fevers are only the attendants of maladies, being, in fact, only symptoms of the disorder or disease of some part. They are the general or systemic symptoms of maladies; and as the local ones are the signs of physiological deviations immediately arising from the affected part, fevers are general symptoms or signs of physiological deviations, arising from the systems of the body sympathizing (according to the usual phrase) with the local affection." (P. 43.)

"20. All those remedies, therefore, which convert physiology into pathology, cannot be admitted; nor should any medicine be administered intended to produce or prolong a state of pathology. Strong counter-irritants, blisters, cauteries, issues, revulsives, excessive stimulants, which excite organized parts beyond the healthy standard, are improper medicines; so likewise are diaphoretics, diuretics, purgatives, emetics, and others, given in such a manner as to sweat, urinate, purge, vomit, &c., because these effects are the products of a state of structure and power different from that of health, creating, in short, disease.

"It is at war with common sense, as well as with observation, to think it possible to obtain physiology by changing a part into pathology. The above remedies, then, and indeed all kinds, should only be administered so as to procure a healthy state of power and matter: thus remedies from the class of purgative medicines should not be given in such a manner as to keep up a purging, for this would be creating a malady called diarrhœa, or an inflammation of the intestinal mucous membrane; but their effects should be to unload the alvine canal, to solicit proper secretions, and to restore a physiological state of structure, which will be manifested by healthy regular evacuations both in number, quantity, and quality." (P. 45.)

Against the 21st, which avers that "disorder of structure is frequently curable," we have no objection to make.

There is something startling in the hypothesis that the blood possesses an inherent power of self-motion: that it actually, not figuratively, *runs* through the blood-vessels, and does not need to be driven by a *vis a tergo*, or any other *vis*, the presence and power of which physiologists so long have laboured to explain.

"There is also a power of motion inherent in the blood, by which it is enabled to perform the circuit of the body, assisted by the propulsive action of the heart and vessels; and, divesting ourselves of all prejudices about the self-motion of a fluid, it will, I am convinced, be found the most rational mode of explaining the phenomena of the circulating fluid. This doctrine of the self-motion of the blood may not, from the difficulty of obtaining an unexceptionable proof, be supported by a direct experiment; but I trust it will be abundantly borne out by indirect evidence. I am persuaded that the powers of the vascular textures, singly or combined, will be found altogether inadequate to carry on the circulation; and this ought to convince even infidelity itself, that some other power, besides those usually enumerated, is wanting to account for the motion of the blood." (P. 51.)

"The inadequacy of the propulsive power of the heart and vascular tubes for the accomplishment of the circulation would seem to have been silently or indirectly felt. The old writers called in the assistance of a *vis a tergo* of the blood, the pressure of surrounding or neighbouring parts, and stated, that the vessels were so situated as to be mechanically exposed to the action of muscles, that the veins were intentionally situated close to the large arteries, to secure the advantage of the pulsation; and attributed much to the forces of gravity and capillary attraction. These formed chiefly the Harveian school; but another set of writers most ingeniously applied, in addition, the reasoning of mathematics and the experiments of physical philosophy, in the physiology of the circulation. Borelli, Keil, Hales, and some others, were the ornaments of this school: but, even with their additions, the propulsive powers, as yet allowed, seemed defective to another class of writers, who manifested equal ingenuity in their search for still other powers. The mechanism of the heart was minutely examined, and held up as a model of a forcing and suction pump. To finish this motive system of machinery, the pressure of the lungs, filled with air, on the heart, and the pressure of the atmosphere on the body, were lugged in, to eke out what was seen to be defective. This very act was a tacit acknowledgment, on the part of these mechanical theorists, that the powers of the heart were inadequate to propel the blood through its whole course. Wilson, Carson, and more lately Barry, were the able supporters of this, the sanguineous-mechanical school, which never boasted of many disciples: and its inadequacy has been, I may even say, universally admitted." (P. 52.)

" In leeches, earth-worms, zoophytes, and vegetables, there is no heart. The circulation of the blood in the lower grades of animation is effected simply by the blood and vascular tubes; and it is known that the motion of the circulating fluids, in these tubes, whether blood or sap, is carried on sometimes with an astonishing velocity and force. In every animal the absorbent and lymphatic systems have no immediate prime propelling power; but the circulation of these fluids is carried on with perfection; and phenomena sometimes shew motions rapid and forcible. The deductions to be drawn from these facts are clear and obvious. In animal hydraulics, a first-rate propelling power (as we must consider the heart to be,) is not indispensable for the circulation of its fluids, which can move and circulate without a heart.

" Even in the human subject, cases occasionally occur in which the heart is found to be wanting, and that too at a period of life when its services can least be dispensed with. Monstrous human fœtuses are recorded to have been born, plump and fat, without a heart. Every organ is formed with powers to answer some necessary purpose, as well as for the due performance of its functions: but it cannot be supposed, for it would be contrary to the laws of the animal economy, that the heart of the mother should be suddenly (or in a short space of time,) endowed with extraordinary, and what must, after the birth of the child, be superfluous, organization and powers, in order to support two circulations, her own and that of her fœtus, a *lusus naturæ*, which in her case may never be sported again. The circulation in the fœtus without a heart must be an act of the blood and vascular tubes; for very many circumstances conspire to prove the maternal heart incapable of effecting it. The extremely tortuous and unnecessarily lengthened course of the vessels, particularly those of the umbilical chord, are unfavorable for the promotion of any velocity or force of motion, as given by a first-rate impelling power. The natural and morbid instances of the absence of the heart demonstrate that it is an organ not indispensable for sanguification, and that the blood's motion can be supported, and its circulation maintained, without a heart, or any first-rate propelling power." (P. 55.)

" The blood, then, even of the arteries, possesses a power of mobility, and the circulation in this order of vessels is effected by the combined action of the heart, arteries, and blood.

" The general admission among physiologists is, that the blood moves in the capillaries unaided by the heart; and many phenomena strongly support this opinion, which, on account of the brevity demanded here, cannot be fully considered, since it is not generally disputed. The circulation, then, in this system of vessels must depend on the blood and capillaries: and it now remains to examine if the blood has any share in propelling itself, or if it be propelled solely by the moving powers of the minute vessels." (P. 67.)

"The minute vessels have little, if any, elastic power, and the action of contractility must be the sole agent by which the vessels assist the circulation; but this assistance is a force altogether inadequate to the perfect propulsion of the capillary blood. Daily observation will readily present physiological facts in confirmation, and will shew the capillaries of some membranes in a non-impelling state, and therefore not moving the blood. That these small vessels cannot be contracting at the same time that they are dilated, is a truism too self-evident to fear contradiction; and an increased quantity of blood must dilate them. Such an increased quantity accumulates during the natural act of blushing, which, in some cases, continues for a great length of time; but when the cavity of the vessel is so surcharged, and its sides so dilated, the circulation still proceeds with even an increased velocity. The circulation, then, must be effected, and continued, by the moving power of the blood; for there is no other power, physical, mechanical, or vital, to which it can, by any possibility, be attributed. The vessels, it is to be recollected, are dilated, and contraction is the force which, by pressing on the blood, moves and circulates that fluid. In this dilated state the blood and vessels remain, till the contractile power of the middle coat reacts, and, by diminishing the cavity of the canal, restores it to its usual bore. Pathology abounds with such facts; for inflammation presents such a state of incapacitated capillaries, in every membrane and organ of the body. The weight of a column of arterial blood does not furnish sufficient force; for, from the position of the vessels, gravity does not affect it; but the blood is regularly transmitted. Capillary attraction, of whose laws natural philosophy is unfortunately very ignorant, cannot account for this; for the diameter of many of the larger capillaries is too great to permit the action of this kind of attraction. Indeed, it is very doubtful if it operates in any degree, even in the very smallest of these vessels, and an immense number of them are exceedingly minute. The working of animal machinery, and its many oily surfaces, do not favor the operations of this power; but still, if I were requested to select any part of the body in proof of the self-motion of the blood, I would triumphantly point to the capillary system. These small, but very important vessels, are as often out of a condition for assisting the circulatory motion, as they are in a state favorable for the transmission of blood; but the blood, assisted or not, moves on by its own moving force.

"The current of the blood is observed often to be increased in velocity, sometimes in quantity, when passing from the capillaries, to the veins, which is owing to the conjoint action of the blood and the small vessels. The capillaries are extremely numerous, amounting to myriads, and the vast multitude of them extremely small, descending to $\frac{1}{300}$ and $\frac{1}{3000}$ part of an inch. Some are even stated by writers to be much more minute. The force of such vessels must be small, and the capillary *vis a tergo* of the blood flowing from such diminutive passages trifling; particularly when the physiology of the muscular texture, and the physical force of friction, are recollected. The retardations will be inversely as the diameter of the tubes, and directly as the viscidity of the blood. From these data, it is a fair inference that the motion of the venous blood must depend on the blood and veins; for it can bring no acquired force from the capillaries,

"The veins can render but little assistance to the circulation. Their structure forbids it; and their coats are, in general, possessed of very little contractile power. The irregularity in the distribution of a middle coat, its thinness, and total absence in a great number of these vessels, and even in parts of the same vessel, show that its presence is not indispensable for the motion of the blood. The venous circulation, then, is effected and perfected by the power of some other matter; and as there is no other than the blood, the circulating force must therefore be some moving power of the blood. The sinuses of the brain, being the venous receptacles into which the innumerable small venous branches of this divine organ pour their tributary streams, are formed only of the common inner lining of all the vessels, and the fibrous membrane of the *dura mater*, which are textures possessing no contractile powers. In spite, however, of this want of assistance from the vessels, the full and easy current of the circulation is regularly maintained, and the blood is poured into the veins external to the encephalon, by means of its own moving powers.

"When we consider that the greatest quantity of venous blood moves against the laws of gravity, and all the known laws of dead fluids, in vessels perfectly flaccid, and confessedly too deficient in contractile power, we cannot withhold our confession of the truth, that the blood must have a power of motion within itself. When we see veins so distended that they must have their middle coat placed beyond its sphere of contractile action, as in varicocele, where the blood is moving in vessels which only serve to confine its fluid; when we see the great tortuosity and plexuses of venous trunks; when we see their frequent and innumerable branchings and joinings, so as to form so many ovals, we must admit that the solid textures do not effectually propel the blood; and, knowing that all the actions of the vascular system are accomplished by the powers of its own matter, we must admit that the blood has motion inherent in its structure. We see it placed in situations where it is deprived of every adequate means of containing circulation, except by the force or exercise of its own moving powers.

"Nor is it surprising that the blood should move itself; it is only accordant with the phenomena of animated nature. The great characteristic between organic and inorganic matter is that the former possesses within itself a power as well of producing as of stopping motion in its own body; while in the latter a body must receive its motion from the chemical and mechanical impression of some other body, and, when in action, must be stopped by another power. If a stone, previously at rest, be dropped from some elevation, it will continue in motion by the laws of gravitation, throughout all space, until it is stayed in its progress by some greater power, as the earth. A locomotive engine, put in motion by the expansive force of steam, will continue moving as long as there is any steam, unless prevented by some other machinery or power. But neither the stone nor the engine can of itself either begin or stop its motions. On the contrary, well organized structures, fluid and solid, can of themselves both move and stop.

"Even vital fluid has, therefore, a power of self-motion; and this supposition will furnish the only rational mode of accounting for the currents of the chyle and vegetable sap. Motion, in these last two systems, animal absorbent and vegetable sap-vessels, is adequately accomplished without a first-rate propelling power. The membranes forming the vessels themselves are obviously too weak and delicate to possess much propulsive force; but physiologists have evaded all inquiries on the subject, by attributing this power to absorption, which I consider to be an expression used as a cloak for ignorance. Some of them, perceiving that this property did not afford a sufficient explanation for the progressive motion and selection of these fluid bodies, called to their aid a *vita propria*, which, in fact, explains nothing, and only makes 'darkness visible.'" (P. 68.)

We are far from being affected with the Nosologimania which the Cullenians, and those emanating from that school, were famed for; still we think the following sweeping condemnation scarcely just: "The present complicated nosologies are, therefore, not only perfectly useless, but injurious, since the cause of the pathological states of structure is clearly attributable to one variety or other of inflammation;" and we acknowledge our obtuseness in not perceiving the vast superiority of the arrangement here proposed.

"Medical philosophers and nosologists have attempted to classify fevers, and, as might be expected, all their labours have proved abortive; for they collected groups of symptoms, and dignified them with the title of fever. If distinctions are to be made in fevers, (which I regard as absolutely unnecessary,) I would designate them by the predominance of the disordered state and actions of one of the principal systems. The digestive system is either more or less disordered in every case; but in some instances the greatest disorder obviously prevails in it, and the fever might thus be called the gastric. In other cases, the actions belonging to the nervous or vascular systems may predominate, the symptoms belonging to one or the other being most strongly marked, and the fever might be called the nervous or vascular accordingly. The reason of the disorder of one system exceeding the others, will not unusually be found in the greater inflammation of that part of it which enters into the affected texture: for instance, if the capillaries of the affected part be more inflamed than either the absorbents or nerves, the associated disorder of the vascular system is then likely to exceed that of the digestive or nervous. The state of the organization of those organs which are the centres of their respective systems will influence the fever; but, in whatever system the disorder may be greatest at first, it is liable, during the progress of the disease, to prevail in the highest degree in another, and, towards the close, to be equal in all. In many cases, however, it is impossible to ascertain that the fever of any one system is greater than that of another; for all the systems are alike disordered." (P. 211.)

We are happy to find, however, that, although we are far more old-fashioned in our theories of disease, that we should not be far behind our author in its treatment, and that our practice would not be opposed in many respects; the system of counter-irritation and incisions in erysipelas being the most important points of difference.

"Cupping, and incisions, are other means practised for the attainment of the same objects as leeches. Cupping is beneficially applied on the skin, over deep-seated parts which are chronically inflamed; and, in addition to the removal of blood, accumulates a quantity of capillary blood in the cupped textures, which very rarely fall into inflammation. Incisions have lately been made, by several distinguished surgeons, on parts labouring under compound erysipelas: one surgeon recommends the incisions to measure an inch, or an inch and a half, to go deep, and to number from six to eighteen: a second, more bold, will have the scalpel to make few incisions, but these enormous ones, extending over all the erysipelatous surface; one cut on this plan has even measured eighteen inches, so that two or three long cuts generally suffice: and a third will have the other surface studded over with numerous small apertures from the pricks of a lancet. If the principles of this treatment be examined, they will be found applicable to all inflammations where tension, and accumulation of fluids, take place; and I have therefore cut parts in a state of phlegmon, with the same effect as in compound erysipelas. But does this cutting practice offer any superiority over leeches, sufficient to counterbalance its severity, the great, if not occasionally even fatal, hazard from hemorrhage, and the certain fact that perfect resolution can never be obtained; for after the abatement of inflammation, there will still remain numerous small, or a few immense, gaping wounds, or a multitude of little pricks or ulcers to be healed, which is a consideration of no minor importance in bad constitutions. Incisions, by dividing the vessels, allow a free flow of blood, and the escape of the effused fluids, which leeches do not, though they unburden the vessels, by removing the blood; so that the same object is attained by both means, with this difference, that leeches remove not the effused fluids, but leave no wounds, which incisions do. The former are, therefore, generally preferable to the latter, since the effusions can be, and often are, readily absorbed." (P. 266.)

"There is another class of local remedies in general use, called counter-irritants, blisters, cauteries, escars, mustard poultices, ointments of tartarized antimony, and such like. The modus operandi of these remedies has been the subject of a variety of conjectures: some have looked to anatomy for a solution of the enigma, and have endeavoured to trace the route of some branch of a blood-vessel from the inflamed to the blistered part; others have attributed it to nervous agency; and others to sympathy. I believe the true solution will be found in the circumstance of another and new malady being produced by them, affecting some structure, or its organizing machinery, and the constitution. It is, in fact, an attempt to cure one disease by making another, either in the same structure, or on some other. These stimuli are applied on the inflamed structure itself; on healthy parts situated near the disordered; on another texture of the same anatomical nature, or otherwise; or on parts very remote." (P. 269.)

"On the other hand, if it be attempted by these stimulants to transfer the inflammation of an important part to an unimportant one, the attempt, in the vast majority of cases, will fail; so that there will be two diseases, or two parts affected, instead of one. Even when by chance it does succeed, the original malady is very liable to return, and create a new one, which is another source of disorder and of fever. These remedies are sometimes applied to parts very remote from the original malady, as sinapisms to the feet for affections of the head, but for what purpose I have not been able to discover. This principle, or practice, is a remnant of the antiquated doctrines of derivation, and is not worthy of any serious attention. In short, the only utility of this class of stimulants is to give pain; and when pain becomes desirable, or a certain benefit, or a source of pleasure, these remedies may be used; but, as long as pain is an evil, let them be discarded. They are unnecessary, and very frequently injurious." (P. 271.)

There are many other points on which we differ considerably from our author, besides those to which we have above adverted; such as his explanation of the cause of the buffy coat of the blood, for we cannot conceive that it arises from forcible and *rapid* coagulation:" but we have neither time nor space for further observations, and therefore, in conclusion, can only add, that, although we have read this treatise with much attention, we are still far from being convinced "that the beginning of every morbid evil is a species of inflammation;" because, if it be so admitted, the received idea of inflammation must be changed for a definition essentially different; and we are not persuaded that any advantages would result from the change, equivalent to the distraction it would cause.

On Hybernation. By MARSHALL HALL, M.D., F.R.S. L. & E., &c. (From the *Philosophical Transactions.*)

IN this memoir, the author follows out the principle developed in the essay noticed in a previous number, entitled a "Theory of the Inverse Ratio which subsists between the Respiration and Irritability, in the Animal Kingdom." Some of the results obtained are curious and interesting. We shall condense a part of the experimental inquiry.

"That peculiar condition of certain mammalia during the winter season, which has been designated hybernation, has been aptly compared by various authors to ordinary sleep. In both the respiration is diminished. This fact was first determined, in regard to sleep, by Messrs. Allen and Pepys. It obtains in a much higher degree in the state of hybernation. It is highly probable that in sleep, as in hybernation, the irritability of the muscular fibre becomes augmented. These two conditions of the animal system may therefore mutually illustrate each other.

"Ordinary sleep is similar to the sleep of the hybernating animal; and the sleep of the hybernating animal is similar to that deeper sleep, or lethargy, which is designated hybernation. We are thus led to trace a connexion between the recurrent sleep of all animals, and the deep and protracted sleep of a few.

"1. *Of the Sleep of hybernating Animals.* In the sleep of the hybernating animal, the respiration is more or less impaired: if the animal be placed in circumstances which best admit of observation, the acts of respiration will be found to have greatly diminished; if it be placed in the pneumatometer, little alteration is induced in the bulk of the air; if its temperature be taken by the thermometer, it will be found to be many degrees lower than that of the animal in its active state; if it be deprived of atmospheric air, it is not immediately incommoded or injured." (P. 1.)

"The respiration is very nearly suspended in hybernation. That this function almost ceases, is proved, 1st, by the absence of all detectible respiratory acts; 2dly, by the almost entire absence of any change in the air of the pneumatometer; 3dly, by the subsidence of the temperature to that of the atmosphere; and 4thly, by the capability of supporting, for a great length of time, the entire privation of air." (P. 4.)

The following may serve as an example of the experiments whence the conclusions in this paper have been drawn, and some of which are, in the original memoir, reduced to a tabular form, and the registers kept for many days successively.

"On January the 28th, the temperature of the atmosphere being 42°, I placed a bat in the most perfect state of hybernation, and undisturbed quiet, in the pneumatometer, during the whole night, a space of ten hours, from 1h. 30m. to 11h. 30m. There was no perceptible absorption of gas.

"Having roused the animal a little, I replaced it in the pneumatometer, and continued to disturb it from time to time, by moving the apparatus. It continued inactive, and between the hours of 1h. 20m. and 4h., there was the absorption of one cubic inch only of gas.

"Being much roused at four o'clock, and replaced in the pneumatometer, the bat now continued moving about incessantly; in one hour, five cubic inches had disappeared. It was then removed. A further absorption took place of .8 of a cubic inch of gas.

"Thus the same little animal, which, in a state of hybernation, passed ten hours without respiration, absorbed or converted 5.8 cubic inches of oxygen gas into carbonic acid, in one hour, when in a state of activity. In an intermediate condition, it removed one cubic inch of oxygen in two hours and forty minutes.

"I repeated this experiment on February the 18th. A bat, in a state of perfect hybernation, was placed in the pneumatometer, and remained in it during the space of twenty-four hours. There was now the indication of a very slight absorption of gas, not, however, amounting to a cubic inch.

"On February the 22d, I repeated this experiment once more, continuing it during the space of sixty hours; the thermometer descended gradually, but irregularly, from 41° to 38°; the result is given in the subjoined Table.

Date,		External Temp.	Absorption.	Duration.
February 22	11 P.M.	41°		
23	11 A.M.	38½	·8	12h.
	11 P.M.	39½	·75	12
24	11 A.M.	38	·5	14
	11 P.M.	39	·75	12
25	11 A.M.	38	·6	12
			3·4	60

"From this experiment it appears that 3.4 cubic inches of oxygen gas disappeared in sixty hours, from the respiration of a bat in the state of lethargy. It has been seen that in a state of activity, an equal quantity of this gas disappeared in less than half that number of minutes. The respiration of the hybernating bat descends to a sub-reptile state; it will be seen shortly that the irritability of the heart, and of the muscular fibre generally, is proportionably augmented.

"In this experiment it is probable that the lethargy of the animal was not quite complete." (P. 5.)

Another lengthened series of observations was made to show that "the temperature of the hybernating animal accurately follows that of the atmosphere;" but for the detail of these we must refer the reader to the original memoir: the results are as follow:

"When the changes of temperature in the latter are slight, the two thermometers denote the same temperature. If these changes are greater and more rapid, the temperature of the animal is a little lower or higher, according as the external temperature rises or falls; a little time being obviously required for the animal to attain that temperature.

"Similar observations were made during the first three days of February. On the 4th, however, the temperature of the atmosphere rose to 50½°; that of the animal was now 82°, and there was a considerable restlessness. On the 6th, the temperature of the atmosphere had fallen to 47½°, and that of the animal to 48°, whilst there was a return of the lethargy.

"After this period there were the same equal alterations of temperature in the animal and in the atmosphere, observed in the month of January.

"It is only necessary to add to these observations, that the internal temperature is about three degrees higher than that of the epigastrium. In two bats, the external temperature of each of which was 36°, a fine thermometer, with an extremely minute cylindrical bulb, passed gently into the stomach, rose to 39°." (P. 8.)

After quoting some experiments of Jenner, Edwards, and Spallanzani, our author continues: "It is in strict accordance with these facts that the lethargic animal is enabled to bear the total abstraction of atmospheric air, or oxygen gas, for a considerable period of time."

"A bat which was lethargic in an atmosphere of 36° was immersed in water of 41°. It moved about a little, and expelled bubbles of air from its lungs. It was kept in the water during sixteen minutes, and then removed. It appeared to be uninjured by the experiment.

"A hedgehog, which had been so lethargic in an atmosphere of 40° as not to awake for food during several days, was immersed in water of 42°. It moved about and expelled air from its lungs. It was retained under the water during 22½ minutes: it was then removed. It appeared uninjured.

"It seems probable that the motions observed in these animals were excited through the medium of the cutaneous nerves.

"The power of supporting the abstraction of oxygen gas, or atmospheric air, belongs solely to the hybernating state, and is no property of the hybernating animal in its state of activity. After having found that the dormant bat, in summer, supported immersion in water, during eleven minutes, uninjured, I was anxious to know whether the active hedgehog possessed the same power, I immersed one of these animals in water. It expired in three minutes, the period in which immersion proves fatal to the other mammalia. Sir Anthony Carlisle has, therefore, committed an error, somewhat similar to that of Dr. Edwards, when he asserts that 'animals of the class mammalia, which hybernate and become torpid in winter, have at all times a power of subsisting under a confined respiration, which would destroy other animals not having this peculiar habit.' The power of bearing a suspended respiration is an induced state. It depends upon sleep or lethargy themselves, and their effect in impairing or suspending respiration; and upon the peculiar power of the left side of the heart, of becoming veno-contractile under these circumstances.

"2. *Of the Irritability.* The single fact of a power of sustaining the privation of air, without loss of life, leads alone to the inference that the irritability is greatly augmented in the state of hybernation. This inference flows from the law so fully stated in my former paper, and the fact is one of its most remarkable illustrations and confirmations.

"It might have been inferred from these premises, that the beat of the heart would continue longer after decapitation in the state of hybernation than in the state of activity in the same animal: an inference at once most singular and correct.

"This view receives the fullest confirmation from the following remarkable experiment: On March the 9th, soon after midnight, I took a hedgehog which had been in a state of uninterrupted lethargy during 150 hours, and divided the spinal marrow just below the occiput; I then removed the brain and destroyed the whole spinal marrow as gently as possible. The action of the heart continued vigorous during four hours, when, seeing no prospect of a termination to the experiment, I resolved to envelop the animal in a wet cloth, and leave it until early in the morning. At seven o'clock A.M. the beat of both sides of the heart still continued. They still continued to move at ten A.M., each auricle and each ventricle contracting quite distinctly. At half after eleven A.M. all were equally motionless; yet all equally contracted on being stimulated by the point of a penknife. At noon the two ventricles were alike unmoved on being irritated as before; but both auricles contracted. Both auricles and ventricles were shortly afterwards inirritable.

"This experiment is the most extraordinary of those which have been performed upon the mammalia. It proves several interesting and important points: 1. That the irritability of the heart is augmented in continued lethargy in an extraordinary degree. 2. That the irritability of the left side of the heart is then little, if at all, less irritable than the right, that it is, in fact, veno-contractile. 3. That, in this condition of the animal system, the action of the heart continues for a considerable period independently of the brain and spinal marrow.

"On April the 20th, at six o'clock in the evening, the temperature of the atmosphere being 53°, a comparative experiment was made upon a hedgehog in its state of activity: the spinal marrow was simply divided at the occiput: the beat of the right ventricle continued upwards of two hours, that of the left ventricle ceased almost immediately; the left auricle ceased to beat in less than a quarter of an hour; the right auricle also ceased to beat long before the right ventricle." (P. 11.)

We need make no comments on the above experiments; and the following observations are likewise worthy attention, as being the only really satisfactory ones which have been made on the circulation of hybernating animals.

"The wing of the bat affords an admirable opportunity of observing the condition of the circulation during hybernation. But it requires peculiar management. If the animal be taken from its cage, and the wing extended under the miscroscope, it is roused by the operation, and its respiratory and other movements are so excited, that all accurate observation of the condition of the circulation in the minute vessels is completely frustrated. Still greater caution is required in this case, than even in the observation of the respiration and temperature.

"After some fruitless trials, I at length succeeded perfectly in obtaining a view of the minute circulation undisturbed. Having placed the animal, in its state of hybernation, in a little box of mahogany, I gently drew out its wing through a crevice made in the side of the box; I fixed the tip of the extended wing between portions of cork; I then attached the box and the cork to a piece of plate-glass; and, lastly, I left the animal in this situation, in a cold atmosphere, to resume its lethargy.

"I could now quietly convey the animal ready prepared, and place it in the field of the miscroscope without disturbing its slumbers, and observe the condition of the circulation.

"In this manner I have ascertained that, although the respiration be suspended, the circulation continues uninterruptedly. It is slow in the minute arteries and veins; the beat of the heart is regular, and generally about twenty-eight times in the minute.

"We might be disposed to view the condition of the circulation in the state of hybernation as being reptile, or analogous to that of the batrachian tribes. But when we reflect that the respiration is nearly, if not totally, suspended, and that the blood is venous, we must view the condition of the circulation as in a lower condition still, and, as it were, sub-reptile. It may, indeed, be rather compared to that state of the circulation which is observed in the frog from which the brain and spinal marrow have been removed by minute portions at distant intervals.

"In fact, in the midst of a suspended respiration, and an impaired condition of some other functions, one vital property is augmented. This is the irritability, and especially the irritability of the left side of the heart. The left side of the heart, which is, in the hybernating animal, in its state of activity, as in all the other mammalia, only arterio-contractile, becomes veno-contractile.

"This phenomenon is one of the most remarkable presented to me in the whole animal kingdom. It forms the single exception to the most general rule, amongst animals which possess a double heart. It accounts for the possibility of immersion in water or a noxious gas, without drowning or asphyxia; and it accounts for the possibility of a suspended respiration, without the feeling of oppression or pain, although sensation be unimpaired. It is, in a word, this peculiar phenomenon, which, conjoined with the peculiar effect of sleep in inducing diminished respiration in hybernating animals, constitutes the susceptibility and capability of taking on the hybernating state. On the other hand, as the rapid circulation of a highly arterialized blood in the brain and spinal marrow of birds probably conduces to their activity, the slow circulation of a venous blood, doubtless contributes to the lethargy of the hybernating animal." (P. 17.)

The gradations which have been observed in the profoundness of the lethargy, and in the period of its duration, have, in each stage, especial reference to the habits and wants of the animal.

"There is much difference in the powers of digestion, and in the fact of omitting to take food, in the hybernation of different animals. The bat, being insectivorous, would awake in vain; no food could be found: the hedgehog might obtain snails or worms, if the ground were not very hard from frost; the dormouse would find less difficulty in meeting with grain and fruits. We accordingly observe a remarkable difference in the habits of awaking from their lethargy or hybernation, in these different animals.

"I have observed no disposition to awake at all in the bat, except from external warmth or excitement. If the temperature be about 40° or 45°, the hedgehog, on the other hand, awakes, after various intervals of two, three, or four days passed in lethargy, to take food; and again returns to its state of hybernation. The dormouse, under similar circumstances, awakes daily.

"Proportionate to the disposition to awake and take food, is the state of the functions of the stomach, bowels, and kidneys. The dormouse and the hedgehog pass the fæces and urine in abundance during their intervals of activity. The bat is scarcely observed to have any excretions during its continued lethargy.

"In the dormouse and the hedgehog, the sense of hunger appears to rouse the animal from its hybernation, whilst the food taken conduces to a return of the state of lethargy. It has already been observed, that there are alternations between activity and lethargy in this animal, with the taking of food, in temperatures about 40° or 45°. Nevertheless, abstinence doubtless conduces to hybernation, by rendering the system more susceptible of the influence of cold, in inducing sleep and the loss of temperature. The hedgehog, which awakes from its hybernation, and does not eat, returns to its lethargy sooner than the one which is allowed food." (P. 19.)

We reluctantly pass by the sections relating to "Torpor from Cold," "Sensibility," "Muscular Motility and Reviviscence," without transferring any of the extracts we had marked to our pages; but space forbids us to do more than quote the author's recapitulation.

"The object of this paper has been to treat of the singular phenomena of hybernation, and especially to point out the remarkable application of the law stated in my former paper, to the active and lethargic states of the hybernating animal.

"1. The natural sleep of the hybernating animal differs greatly, yet only in degree, from the sleep of any other animal.

"2. This sleep passes insensibly into the state of true hybernation, which is more profound, as the blood loses its arterial character; for,

"3. In hybernation, the respiration and the evolution of heat are nearly suspended.

"4. The irritability is, at the same time, singularly augmented; and the animal bears proportionately the privation of air.

"5. The nervous sensibility and the muscular motility are unimpaired.

"6. There is the singular phenomenon of this unimpaired sensibility, and the capability of bearing the privation of air without pain; a fact which receives an interesting and perfect explanation from the additional fact of the augmented irritability or venocontractibility of the left side of the heart.

"7. There is an important distinction between true hybernation and torpor from cold, not attended to by physiologists.

"8. Severe cold, like all other causes of pain, rouses the hybernating animal from its lethargy; and, if continued, induces the state of torpor.

"In conclusion, one of the most general effects of sleep, is to impair the respiration, and, with that function, the evolution of animal temperature. The impaired state of the respiration induces a less arterial condition of the blood, which then becomes unfit for stimulating the heart: accumulation of the blood takes place in the pulmonary veins and left auricle; a sense of oppression is induced, and the animal is either roused to draw a deep sigh, or awakes altogether.

"Such are the phenomena in animals in which the heart has not the faculty of taking on an augmented state of irritability, with this lessened degree of stimulus. But in those animals which do possess this faculty, a property which constitutes the power of hybernation, the heart continues the circulation of the blood, more slowly indeed, but not less perfectly, although its arterial character be diminished and its stimulant property impaired. No repletion of the pulmonary veins and of the left auricle, no sense of oppression is induced, and the animal is not roused; the respiration continues low, the temperature falls, and the animal can bear, for a short period, the abstraction of atmospheric air.

"All the phenomena of hybernation originate, then, in the susceptibility of augmented irritability. The state of sleep, which may be viewed as the first stage of hybernation, induces an impaired degree of respiration. This would soon be attended with pain, if the irritability of the heart were not at the same time augmented, so as to carry on the circulation of a less arterial blood, and the animal would draw a deep sigh, would augment its respiration, or awake. Occasional sighs are, indeed, observed in the sleep of all animals, except the hybernating. In these, the circulation goes on uninterruptedly, with a diminished respiration, by the means of an augmented irritability. There is no stagnation of the blood at the heart; consequently, no uneasiness; and the animal becomes more and more lethargic, as the circulation of a venous blood is more complete. This lethargy is eventually interrupted by circumstances which break ordinary sleep, as external stimuli, or the calls of appetite.

"Moderate cold disposes to sleep, to lethargy; but severer cold induces a different condition of the system, that of torpor. Sleep is the medium between such moderate cold and the phenomena of hybernation; torpor is the immediate effect of the severer degrees of cold.

"This investigation naturally leads to that of the comparative conditions of the respiration and of the irritability, in the pupa and perfect states of some species of the insect tribes. There is much reason to suppose that these states are respectively similar to those of lethargy and activity in the hybernating animal." (P. 24.)

A peroration is not needed to express our opinion of this paper; the extracts we have made demonstrate our belief that it is a very valuable contribution to modern physiology, and that the experiments and theories have not only truth but novelty to recommend them.

BIBLIOGRAPHICAL NOTICE.

A General System of Gardening and Botany; containing a complete Enumeration and Description of all Plants hitherto known; with their Generic and Specific Characters, Places of Growth, Time of Flowering, Mode of Culture, and their Uses in Medicine and Domestic Economy. Preceded by Introductions to the Linnæan and Natural Systems, and a Glossary of the Terms used. Founded upon "Miller's Gardener's Dictionary," and arranged according to the Natural System. By GEORGE DON, F.L.S. In four volumes, 4to. Vols. I. and II. — Pp. 818 and 875; with figures on wood. Rivingtons, &c.

DID not the title-page profess, and the advertisements declare, this work to be founded upon "Miller's Gardener's Dictionary," of which it was at first intended to have been a new edition, we confess that we should not very readily have guessed at the foundation; for it is no more founded upon the Dictionary of MILLER than it is upon the Prodromus of DE CANDOLLE, and scarcely so much so; and it might, without any suspicion of plagiary, have been ushered into the world as an original work by the present editor (GEORGE DON), whose name would have been a sufficient guarantee of its worth, even without the sanction of Miller's popularity. But, as the proprietors and publishers, who are shrewd philosophers, as far as mercantile literature is concerned, have judged the present title to be the most advantageous, it is our duty rather to pay attention to the subsequent pages than to criticise the first.

As to reading these two quarto volumes, we make no pretensions to have done so; for who ever read a Dictionary, except to revise the proofs? but we have opened them in numerous places, and have made many references to their columns, and we are enabled to speak very favorably of their contents.

A complete English Species Plantarum, brought up to the present day, was much wanted, and this Mr. Don promises to supply as far as the Ferns. Had the object of this work been to form an analytic scale, our approbation of the plan must have been, however unwillingly, withheld; but, as a history of plants, the scheme of natural affinities is decidedly the best to be pursued. The facility, likewise, of a dictionary reference is gained by the alphabetical index prefixed to each volume, and, we should hope, would be still further insured by a general index to the whole.

In the second volume, the editor has inserted *entire* the catalogues of the varieties of pear and apple, which are but just published by the Horticultural Society. This appropriation of their labours roused the ire of the Fellows, and an injunction against the sale of the volume was applied for, and obtained. We think it would have been but courteous in Mr. Don to have asked permission to copy the catalogue; but we think it far below the objects of literary associations to be so very jealous of their trading concerns. The Transactions of learned Societies are always regarded as public property, and, the more use can be made of them, the more fully are the purposes of such institutions attained: we are, therefore, glad that the injunction has been withdrawn. Still we think it would have more honourable if the Society had not noticed the circumstance, than, without any benefit even in a pecuniary point of view to themselves, to have thus put the editor to the expense of forty pounds, and, after shewing the *malus animus*, to have feared to perpetrate the *mala acta.*

In the introduction, it is proposed to conclude this work with the Ferns. We trust that decision is not irrevocable; or, if it does resemble the laws of the Medes and Persians, which alter not, that Mr. Don will be persuaded to complete the species of the vegetable kingdom, by publishing an appendix, in which the Mosses, Fungi, and Algæ may appear.

On looking through these two volumes, forming half the space allotted to the work, we find that so much less than half of the task proposed has been completed, that we think it impossible it can be finished in four volumes: we trust that the learned editor will not suffer a desire of not exceeding that space to lead him to condense unduly the remaining portion of his labours.

The editor states that THE natural system is followed in this work: we should have felt obliged if he had informed us what natural system; for, as so many THE natural systems are in vogue, we think the indefinite more fitting than the definite article. We, however, suppose that it is De Candolle's version here adopted, with variations; for it certainly is not Jussieu's. In the Jussieuan arrangement, the simplest plants were those the first described, and the series ran from these through more and more elaborate developments; but why De Candolle, Don, and others, commence with Ranunculaceæ, and why to Clematis all other plants should yield the post of honour, we never could divine.

HOSPITAL REPORTS.

WESTMINSTER MEDICAL SOCIETY.

A Case of Epilepsy, of twenty years' standing, detailed before the Westminster Medical Society, by JOHN EPPS, M.D.

A. B., aged thirty-four, a married man, having had nine children, six of which are now living, has been afflicted with epileptic fits since the *eleventh* year of his age. These fits occurred, at first at intervals of a month, more lately of a fortnight, and still more frequently some time before coming under my care. He consulted me, when on a visit to Manchester, in the month of September of the year 1830. He had, as may be supposed, been under the care of several men of decided talent. One celebrated physician declared that the fits arose from a *too great determination of blood to the head.* Bleeding with leeches on the temples and the neck, and other means to diminish, according to the idea entertained, this determination, were adopted. Another celebrated practitioner considered the fits to be dependent *upon the presence of the tapeworm.* The Oleum Terebinthinæ retificatum was prescribed; but with no effect in relieving the disease. Other less noted practitioners treated the fits as dependent upon different causes, but without success. One eminent practitioner had the courage, the moral courage, to refuse to undertake the case; I say moral courage, because I consider it an act of high moral courage to refuse to undertake a case, when the refusal to undertake the same is founded upon the fact, that he, the practitioner, does not see the nature thereof.

Not having experienced any permanent benefit, and having tried so many plans, A. B. had given up all hopes of cure. This gentleman, however, knew a little of phrenology, and having heard of me as a phrenologist, as well as a physician, thought that I might, from the aid of phrenology, be better acquainted with the nature of his complaint than those physicians whom he had consulted, and who were either ignorant of, or unbelievers in the science; and as, in addition, the old axiom is very generally received, even beyond the sacred boundaries of our brethren's studies, that "a knowledge of the disease is half the cure," A. B. imagined that, perchance, some means might be discovered for the cure of his complaint, to him peculiarly troublesome, his pursuits being *intellectual* in their character. On these accounts he consulted me.

After examining minutely into the case, I told him that, though *many* symptoms militated against the hope of recovery, *more* symptoms seemed to justify that hope; and that, such being my opinion, I would undertake the case. His friends, and he himself, looked upon this as the last trial to be made.

I may, advantageously perhaps, briefly state the condition of the patient. A severe dyspepsia affected him; excessive nervousness; frequent and severe pains in the head, attended with soreness of the muscles of the neck. The fits occurring as before stated.

It appeared, therefore, that there were two objects in view, namely, to relieve the dyspepsia, and to remove the cerebellic affection.

To relieve the *dyspepsia*, I ordered the following mixture: ℞. Acidi Hydrocyanici, ad formulam Domini Scheele, gtt. xxx.; Sulphatis Quininæ, ʒss,; Sulphuris Præcipitati, ʒiss.; Confectionis Aromaticæ, gr. xv.; Aquæ distillatæ, f℥iij. He was ordered to keep the mixture carefully excluded from the air and the light, and of it to take a teaspoonful three times a day.

To relieve the *cerebellic* affection, (for I am forced to believe that epilepsy is connected with a diseased state of the cerebellum,) I prescribed the following liniment, to be rubbed diligently down the spine every night: ℞. Linimenti Saponis, f℥i.; Linimenti Camphoræ comp. f℥ss.; Tincturæ Lyttæ, fʒiv.; Ol. Succini. rectificati, fʒvi.

A. B. began attending to my regulations on Sunday, September 26th, 1830. During the first week, he had great pain and weakness in the back, (occasioned, A. B. thought, by the rubbing); also violent stitches and sudden pains through the day, darting from the spine. This latter circumstance seems to be worthy of remark. It is right also to notice, that A. B. had experienced an attack of the epileptic fit a few days before I saw him.

During this first week, already noticed, the *nervous agitation was excessive*, and on Monday, October 4th, he, in expressing the feeling in his head, compared it to "*a whirlpool:*" indeed, so peculiar was the feeling, that, though, as may be conceived, he had experienced an almost infinite variety of feelings, he asserts he never experienced so peculiar a feeling before. "Since that time," he states in his first communication to me, "I have felt much better;" and, "since Saturday," that is, the Saturday following the Monday specified, "I have felt so light and free from pain that I could fancy springs in my shoes when I am moving."

The occurrence of this peculiar feeling on the 4th of October may, in part, be referred to the circumstance of its being about the time of the *bihebdomadal* attack.

The rubbing on the back produced considerable eruption, which, on account of the itching connected with it, was extremely troublesome; a circumstance I did not regret.

A. B. found that the effects described, as well as others not noticed, were so different from those produced by the modes of treatment previously adopted, that he was much encouraged to persevere.

The dyspeptic mixture and the friction were used for a fortnight; the patient, in addition, bathing his feet alternate nights in hot water.

Perceiving the effect I expected was in progress of obtainment, I wrote to desire him to desist from the use of the liniment for a week, and, at the expiration of that period, to have recourse to it again three times a week, for three successive weeks. The mixture was again ordered; but, as the dyspepsia was much relieved, only to be taken twice a day.

Believing that the disease was within the power of remedial means, and also that the diseased condition was a want of power in the nervous fibres, constituting the cerebellum, (and I may remark here, that I intended to show to the Society a preparation, exhibiting the laminated structure of that organ, but being unable to reach home before coming to the Society, I am not able,) I ordered, in addition to the means already noticed, a liniment, consisting of the alcoholic extract of Nux Vomica, dissolved in rectified spirit, to be rubbed upon the back of the head for eight days. The patient commenced the use of this liniment on the 17th of October. Three days after the commencement of this friction, the nervous agitation, before described, again occurred very severely; a recurrence, it will be observed, occurring about the bi-hebdomadal period. From this date to November the 6th, the patient felt little of it.

It may be proper to notice, that, during the week when the rubbing of the back was suspended, the shooting pains from the spine, before described, again occurred, and were troublesome; being removed, however, when friction was had recourse to. In addition hereto, it is necessary to notice that a heat and a pain at the back of the head were much relieved by the friction on that part.

Up to this period the patient had been free from fits; a time of freedom much longer than usual, as he himself observed.

In addition to these means, I recommended A. B., with the view to the tonic effect, to wash the chest and the neck every morning with cold water, and to rub dry with a rough, well-dried cloth. He was requested to disuse the head liniment for fourteen days, at the expiration of which period he was ordered to use it for seven days.

During the interval from the 28th of October to November 6th, the patient had been troubled with the formation of a boil just below, as he states in his letter, "what you call the organ of amativeness." This boil I considered as very useful, and gave me an opportunity of still further encouraging him; for, it must be well known that the formation of boils is very often a very favorable index.

In reply to his letter of November 6th, I desired A. B. to take the following powder every morning: ℞. Sulphatis Quininæ, gr. iij.; Pulv. Cinnamomi, gr. i.; and to rub the back every other week. This recommendation was attended to for eight weeks: and during this period, the liniment for the head was used twice for seven successive nights.

Between this and the 1st of January, A. B. was troubled with a severe cold, and with an attack of English cholera; the latter of which I am inclined to ascribe to the quinine, which acts peculiarly on the liver.

The patient, in his letter of January the 1st, expresses great gratitude that he has begun the new year under such favorable circumstances, not having had an attack of the fits since I prescribed for him. To obviate the injurious effect on the liver, arising from the too long continuance of quinine, I ordered a Seidlitz powder, with a teaspoonful of the best Cogniac brandy and water, to be taken twice a week; and the head to be rubbed with salt water; the back being rubbed with the liniment once a month for three nights successively.

It is a well-known fact, that, in the spring of the year, diseases, which have been lying dormant, often develop themselves, either in their former characters or under their modifications. A. B., in a letter, dated March 4, states " for the last two or three months, I have had a periodical attack every fortnight of vomiting in the night. It causes me to spring out of bed before it awakens me. The vomiting continues most violent for some time, and little, save a frothy matter, comes off the stomach." On one occasion, the patient awoke before the vomiting came on, and the sensation experienced was that of a round substance at the bottom of the throat, which went down gradually till it reached the stomach. The vomiting then began. After the vomiting ceased, this round substance seemed to pass into the bowels, and died away.

This curious modification of the disease attracted the attention of A. B. so much the more, because he had not, previously to this, been subject to vomiting.

Another evidence of the change assumed by the disease was that for three weeks, previous to the 4th of March, A. B. experienced a violent burning heat exactly at the crown of the head, occupying a hand's breadth, striking down the back of the head, and attended with a sensation of great weight on each side of the lower part of the brain. This was attended with great mental confusion; and so severe was this pain, that the least motion of the head to either side caused a sensation similar to that which usually occurred after an attack of the fits, namely, that of the muscles of the neck being strained.

Being convinced that the vomiting was periodic and spasmodic, I might say hysterical in its character, I ordered the liquor arsenicalis in the dose of three drops three times a day, and the following pills: ℞. Assafœtidæ lachrymarum, gr. xii.; Sulphatis Quininæ, gr. viij. M. bené ut fiat pil. vi. duæ h. s. s., three nights before the expected attack, and to be taken for three successive nights. At the same time I forwarded to him, with the view of keeping the bowels regular, and also to restore the liver to a healthy condition, a box of pills, prepared with the compound rhubarb pill and the dandelion extract, as made according to Mr. Houlton's formula by Smith, of Brown street, Edgeware road. I am thus particular in specifying, because I know but that one place in London where good Extractum Taraxaci can be obtained.

The means prescribed were attended with success. Still, however, between this period and the latter end of November, 1831, A. B. was troubled at intervals of two months with the suffocating feeling, the retchings and vomitings; the suffocating feelings continuing sometimes day and night. He wrote to me requesting to know whether I thought fit to recommend any other means, as, in his opinion, the phenomena described originated in the removal of the fits. This idea I appreciated; and, looking, as I did, on these symptoms as indicative of the attempts of the vital powers to relieve the system from the affection of the brain, I considered it my duty to recommend the introduction of an issue, as a means by which the diseased action might be effectually removed from the brain.

On March the 23d, 1832, I received a letter from A. B., in which he stated that the insertion of the issue had been attended with the desired effect.

In the summer of 1832, A. B. went a journey, which still further promoted his cure. He is now entirely free from fits.

It will be observed that I did not order the friction on the back of the head until I had tried and used the liniment on the spine. The reason is, because I find the friction on the spine relieves cerebral congestion; and, this being removed, I then desired to apply the tonic application, the solution of the alcoholic extract of nux vomica.

Such is the case of epilepsy to which the Society has been kind enough to listen.

Before concluding, it may be proper to make one or two observations. The first is, that length of time is not to be our index as to the curability of epilepsy: this patient had been afflicted with the disease for twenty years. The second is, that marriage did not remove the epilepsy, as it often does in persons of a full habit; the seminal evacuations relieving the cerebellum. The third is, that in cases of epilepsy attended with severe dyspeptic symptoms, a cure is more likely than in those cases not so attended. The fourth is, the peculiar modification the disease assumed. The fifth is, the benefit of the issue.

HOPITAL BEAUJON.

Case of Fungus in the Bladder, reported by Dr. Nicod, Surgeon in Chief of the Hôpital Beaujon.

M. Fasquel, sixty-four years of age, a large and robust man, and of a sanguine temperament, who had travelled much and ridden hard on horseback, had for many years been troubled with piles. Finding himself one day more inconvenienced with the hemorrhoidal tumors than usual, he had recourse to a cold hip-bath, from which he experienced great relief: in fact, the piles disappeared; but for several years afterwards he was occasionally afflicted with slight hæmaturia. This new symptom recurred from time to time, and was aggravated whenever he travelled over paved roads or journeyed on horseback. At the beginning of the year 1826, the affection had so much increased that he could not pursue his accustomed journeys, even for a day, without losing a considerable quantity of blood, which, from its increase in quantity, became more and more alarming.

On the 19th of December, he consulted M. Nicod, and informed him that, notwithstanding every precaution in travelling over the unpaved parts of the roads, he had, on his way to him, passed about two cupfuls of blood from the bladder; that he suffered with continual pain at the glans penis; that his urine was at times clear, at others of a dark red hue, and occasionally with a mucous sediment: sometimes it passed freely, and at others with difficulty.

The bladder was examined by the catheter, which was introduced with tolerable ease, and brought away small fibrinous fragments; and, on repeating the introduction with a silver instrument, which was arrested in its progress at about two inches from the neck of the bladder, several fleshy and membranous shreds came away; and, when he passed his urine, it was at first mixed with blood, but subsequently became limpid.

On the morrow, the exploration was renewed with the same instruments, which brought away still more debris; and the patient passed a little blood during the afternoon. On the third day, he passed water more easily and frequently than heretofore, which encouraged him to persevere in the plan of treatment proposed.

Very frequently during the current week, the urethra became partially clogged up with fragments of a fungous or fleshy matter, which, according to the degree of force employed, were detached in larger or smaller shreds from the mass against which the instrument was pressed; and which, when the bladder was emptied of water, seemed to be about the size of the closed fist, and nearly to fill the whole of the vesical cavity. The softness of the tumor, which the examination rendered evident, considered along with the absence of sabulous deposits in the urine, led M. Niçod to determine this extraordinary malady was not complicated with stone in the bladder, and that it consisted of a fungus only.

Encouraged by the visible improvement of the patient's health, and the readiness with which the hemorrhage disappeared, after having passed the catheter four or five times, the operation was repeated twice a day, or more, according to circumstances.

Frequently portions of transparent membrane came away, having a resemblance to fragments of nasal polypi; one of which, when floated in water, was something of the shape of the blossom of a convolvulus, and at least two inches across.

Every day the facility of introducing and moving the instrument in the bladder increased, so that subsequent catheterism proved that no stone existed in the viscus, but that the diagnosis had been correct; the tumor consisting of a fungus only, which was attached on the right side of the *bas fond* of the bladder. The more the fungus was destroyed, the more solid did the remaining part become; and, the more the eyes of the instrument were pressed against it, the more pure blood was voided. The bladder, however, had lost much of the morbid sensibility it exhibited during the early stages of the treatment: this led to the frictions on the tumor being increased, and which terminated by the entire destruction even of the pedicle, which was about eighteen lines in diameter from before backwards. The diseased spot gradually shrunk, and at last ceased to yield any more blood to reiterated frictions by the catheter.

The patient's appetite improved, and week after week his strength increased, and, at the end of about six weeks, he was enabled to ride round Boulogne wood, in a carriage, without passing a drop of blood; and, some days after, he went to Versailles and back, only stopping there an hour, without suffering any hemorrhage. In seven weeks he was entirely cured, and remained well until the year 1831, when he died, at the age of sixty-nine, of apoplexy, attended with a chronic disease of the liver.

This case has proved, as it were, almost by chance, the practicability of what BICHAT thought scarcely possible, viz. the cure of fungus in the bladder; because, as he says, it is so difficult to arrive at any certain diagnosis of these lamentable diseases; and, consequently, to institute any efficacious means of cure; but this case shows that both are possible, because both were done.—*Gazette Medicale.*

HOPITAL DE SAINT LOUIS.

Injury of the First Pair of Nerves, followed by Loss of Smell.

AMONG several cases of gunshot wounds admitted into the Hôpital de Saint-Louis, reports of which have been made by M. VOISIN (*interne de l'hôpital,*) the following is physiologically interesting:

In this case, the ball had passed through both orbits in the plane of the root of the nose, destroying the two eyeballs and the olfactory nerves. The sense of smell is entirely lost. Vinegar, strong ammonia, and so forth, have been employed without any effect to produce their ordinary results. This case is reported for the benefit of those modern physiologists who would dispossess the olfactory nerves (the first pair) of their ancient privileges, for the special aggrandisement of the Trigemini.—*Ibid.*

COLLECTANEA.

Floriferis ut apes in saltibus omnia libant,
Omnia nos, itidem, depascimur aurea dicta.

PATHOLOGY.

Curious Account of Phthisis caused by Mental Depression. Among the occasional causes of phthisis, I know of none of more assured operation than the depressing passions, particularly if strong and of long continuance; and it is worthy of remark, that it is the same cause which seems to contribute most to the development of cancers, and all the other accidental productions which are not analogous to any of the natural tissues. This is, perhaps, the only cause of the greater frequency of consumption in large cities. In these, the single circumstance of the inhabitants having more numerous relations with one another, is in itself a cause of more frequent and deeper vexation; while the greater prevalence of immorality of every kind is a constant source of disappointment and misery, which no kind of consolation, and not even time itself, can effectually remove. I had under my own eyes, during a period of ten years, a striking example of the effect of the depressing passions in producing phthisis; in the case of a religious association of women of recent foundation, and which never received from the ecclesiastical authorities any other than a provisional toleration, on account of the extreme severity of its rules. The diet of these persons was certainly very austere, yet it was by no means beyond what nature could bear. But the ascetic spirit which regulated their minds was such as to give rise to consequences no less serious than surprising: not only was the attention of these women habitually fixed on the most terrible truths of religion, but it was the constant practice to try them by every kind of contrariety and opposition, in order to bring them as soon as possible to an entire renouncement of their own proper will. The consequences of this discipline were the same in all: after being one or two months in the establishment, the catamenia became suppressed, and in the course of one or two months thereafter phthisis declared itself! As no vow was taken in this society, I endeavoured to prevail upon the patients to leave the house as soon as the consumptive symptoms began to appear, and almost all those who followed my advice were cured, although some of them exhibited well-marked indications of the disease. During the ten years that I was physician of this association, I witnessed its entire renovation two or three different times, owing to the entire loss of all its members, with the exception of a small number, consisting chiefly of the superior, the gatekeeper, and the sisters who had the charge of the garden, kitchen, and infirmary. It will be observed that these individuals were those who had the most constant distractions from their religious tasks, and that they also went out pretty often into the city, on business connected with the establishment. In like manner, in other situations it has appeared to me that almost all those who became phthisical, without being constitutionally predisposed to the disease, might attribute the origin of their complaint to grief, either very deep or of long continuance. —Forbes' *Translation of* Laennec *on Diseases of the Chest.*

A parallel instance of phthisis being *caused*, or its *latent causes* being aroused, by violent depressing passions, will be in the recollection of all as occurring in the case of the late lamented Mr. Rose, surgeon to St. George's hospital.—Ed.

PRACTICAL MEDICINE.

Ptyalism cured by Opium; by Dr. J. Graves. A middle-aged woman, of delicate appearance, applied to me for advice on the 26th of December last. She had laboured under a profuse and long-continued leucorrhœa, which ceased rather suddenly in the beginning of September, and was followed by a slight degree of anasarca. This disappeared under a course of diuretic and purgative medicines, but she remained in a debilitated state, and experienced much distress from irritability of stomach, and finally from obstinate retching. In October this symptom also suddenly subsided, and was succeeded by a remarkable and profuse salivation, which continued unabated, notwithstanding the use of various purgatives and astringent medicines, gargles, &c.

In twenty-four hours she spits more than a pint and a half of fluid, consisting of a whitish, viscid mucus, secreted by the mucous membrane of the fauces and back of the pharynx, from whence it is thrown into the mouth by a *hawking*, renewed every two or three minutes, with scarcely any interruption either during the night or day, and rendering the patient truly miserable from want of sleep. The throat and fauces are pale, and their soft parts extremely flabby and relaxed, although there is constant irritation in the throat, in consequence of the presence of an unnatural quantity of mucus; yet no soreness is felt, neither do the parts appear inflamed. The salivary glands are not concerned in the disease, and do not secrete more than the usual quantity of fluid. Her appetite is very bad, her skin dry, and she has a haggard, emaciated countenance.

The well-known good effects of opium in several diseases of increased secretion, diabetes, diarrhœa, and certain forms of dropsy, suggested to me the trial of this medicine in the apparently almost hopeless case I have related, and I accordingly ordered the patient one grain of opium every fourth hour. On the following day, she returned to inform me that she had slept during the whole night, and on awaking had no return of the spitting. Her joy was great, and she and her friends considered the effect of the pills, in thus suddenly stopping the spitting, as most extraordinary; and I must confess that my surprise was almost equal to theirs. She then told me that several medical students, who lived in her house, and who had witnessed the previous violence and obstinacy of her complaint, had been so much struck by its sudden cessation under the influence of the pills, that she was commissioned by them to inquire what I ordered. I mention this circumstance, to shew how very remarkable was the benefit she received from the opium. The pills were continued for some days, when the quantity of opium was augmented on account of some recurrence of the spitting: unfortunately they induced constipation of bowels, and, consequently, she has been frequently obliged to leave them off; but she is, on the whole, much improved in health, and although she is still subject to the disease, its severity is comparatively trifling, and it uniformly disappears almost entirely when she recurs to the use of opium. She visited me this day, the 18th of March. In connexion with this subject I may observe, that a lady, a patient of mine, who took a large quantity of mercury many years ago, has been ever since subject to occasional returns of salivation, in every respect resembling that produced by mercury. During these fits, which are always brought on by exposure to cold, the mouth is sore; the gums red and swollen; the salivation copious, and the breath is strongly impregnated with the mercurial fetor. Several such cases have been recorded by others, and are extremely instructive, proving that the deleterious effects of mercury on the system may lie long dormant, and be afterwards suddenly called into action by various causes. In this way we may explain the attacks of periostitis, to which persons who have been mercurialized are often liable for years, upon exposure to cold. Formerly such attacks were indiscriminately attributed to a remnant of the syphilitic taint, but I have witnessed the same occurrence in persons who had no syphilitic disease, and who had taken mercury for other complaints. One of the most violent attacks of periostitis I ever witnessed, followed salivation in a lady to whom mercury had been given several months before, for the cure of peritonitis. To conclude, I have seen many cases totally at variance with the assertion of Ballingall and others, that the secondary symptoms, attributed by recent authors to mercury, are owing to lues; not being observed, as they state, except in cases where that medicine had been exhibited for the cure of the venereal disease. The venereal poison produces a peculiar train of primary and secondary symptoms; the mercurial another, and that not very dissimilar. Experience has proved that, in general, the venereal symptoms yield to the action of mercury; but occasionally this is not the case, in consequence either of some constitutional peculiarity, or an injudicious use of this mineral, and thus the constitution labours under a modified disease, resulting from the combined effects of the two poisons. Attention to the effects of the remedy in the first instance will generally prevent the occurrence of so disastrous a complication. My own experience has convinced me that the majority of venereal cases may be cured by the non-mercurial plan of treatment; but whenever the disease, whether primary or secondary, proves more than usually obstinate, the practitioner should then have recourse to mercury; the previous treatment will render its curative influence at once safer and more energetic.—*Dublin Journ. of Med. and Chem. Sciences.*

PRACTICAL SURGERY.

Lithotripsy. We have watched the improvements in the means of destroying calculi in the human bladder with extreme anxiety, and have, on several former occasions, laid before our readers detailed accounts of the various modifications which the instruments and the operation have already undergone. Very much pleased were we with the three-branched instruments of **Leroy** and **Civiale**; and still more so with the four-branched instrument of **Heurteloup**, the claws of which are severally moveable, as well as with his two-branched "brise-coque;" but, beautiful as these are in principle, in practical applicability, they are all far, very far, surpassed by the last-named gentleman's "Percussor," which, since we last mentioned it, as being exhibited at the Royal Institution, has undergone much improvement, and been made much stronger. Other instruments have lately been constructed on the same principle with that of the Baron's; and one of them having been submitted to the consideration of the Westminster Medical Society, (by Mr. **Costello**,) Baron **Heurteloup** was requested by the Society to allow his apparatus to be examined, and to show publicly his mode of operating; which he immediately agreed to in the most handsome manner. The following is the short memoir with which the demonstration was prefaced, and which we have much pleasure in being able to give to our readers.—**Editors.**

Mr. President and Gentlemen:

Since I applied the *system of percussion* to the comminution of calculi in the interior of the bladder, by means of a curved instrument and hammer, called *percuteur courbe à marteau*, many persons have attempted to construct a similar apparatus; some have even sought to modify the Percuteur, and seemed to forget that, without performing numerous and varied experiments, and, above all, without operating frequently upon the living subject, we cannot arrive at giving to surgical instruments a proper and advantageous construction. Hence we have seen produced a vast number of defective instruments, and their imperfections have been brought forward as useful modifications, before surgeons whose other avocations, or indifference to the question, have prevented them from thoroughly investigating the subject.

You will readily conceive, Gentlemen, how unpleasant and useless it would be to reply to, and enter into discussion with, the numerous individuals who think they have advantageously modified my instruments.

For about eight years that I have been labouring to present lithotripsy to the scientific world, as an art susceptible of extensive development, and not as a naked and barren subject, I have so frequently seen my combinations imperfectly imitated, or rendered defective by additions and subtractions, that it has been a matter of necessity for me to lay down as an invariable rule, never to notice any such modifications, until they really merited attention, in consequence of their utility being sanctioned and proved by surgical facts.

I have no reason to repent having done so, since all these modifications have of themselves fallen into oblivion, because none of them have ever been employed with success in the relief of patients labouring under stone in the bladder. Thus, you, perhaps, have heard of modifications of the *brise coque*, with which fragments of calculus are pulverized; of the *four-branched instrument*, with which large spherical calculi are excavated, before they are acted upon by the hammer, &c.; but, I think, none have ever heard a patient afflicted with this serious malady attribute his complete recovery to any of these pretended improvements.

You will not, therefore, be surprised, Gentlemen, if, on the present occasion, I remain silent respecting any modifications in an instrument of which I am the inventor, until the advantages of these modifications are established by practical and well-supported facts. A person who entertains the idea of making any alteration in an instrument which has been repeatedly employed with success, must found this idea on practical experience, and not on the caprice of too ardent an imagination. When I modified the first models of the *percuteur*, I was not guided by my taste or fancy, but by study, numberless experiments, and repeated operations on the living subject. It is by these experiments and operations that my eyes were opened to imperfections which were to be carefully avoided, and that I was consequently directed to a path of improvement. Hence sprang a long series of experiments, some of the results of which I here lay before you, in order that you should duly appreciate an instrument constructed with so much labour and care, and the advantages of which have already been sanctioned and illustrated by upwards of eighty successful applications on the living subject. If you examine these instruments, you will find it easy to follow the series of numerous improvements which were pointed out to me, and you will also perceive the imperfections of those which were first constructed. After having examined in a surgical, and above all in a philosophical point of view, you will, I feel assured, blame those who took pleasure in spreading abroad unfounded statements of an operation in which one of the earliest of these instruments yielded. I am alluding to the case of Colonel Rawken, with which you must be well acquainted, for it has been much more spoken of than all my successful cases put together. The two branches or curved portion of the percuteur remained a little apart, and it became necessary, in order to close them and withdraw the instrument, to make a small incision into the urethra, such as are so frequently practised in the extraction of small calculi lodged in this passage. A case, so simple in itself gave rise to the circulation of reports of the most serious nature. It was untruly said, that the operation of lithotomy was performed in order to extract the instrument from the bladder; and it was as untruly added, that the patient died immediately, or very shortly afterwards, in consequence of the operation; whilst, in truth, lithotomy was performed, not because any thing that was previously done rendered it indispensably necessary, since the instrument was easily withdrawn by the means above mentioned, but because it was considered the most prudent measure to adopt. The patient, who was an old man of seventy-five, died, not directly after the operation, but nine weeks after, and expired through exhaustion and want of strength to rally; for at the time of his death the wound was nearly healed, and almost all the urine flowed out naturally by the urethra.

This misrepresented fact, Gentlemen, constituted the grounds on which was founded the condemnation of the *percuteur courbe;* as if an invention, just springing into existence, ought at once to be rejected, for no better reason than the imperfections which may be displayed in its earliest infancy. If steam-vessels had been thrown aside, and the idea discarded, because, in the first applications of this powerful agent, a vessel was blown up, would it not have been acting a most unreasonable part, and should we not have abandoned one of the most sublime inventions of the human mind? If you reflect a moment, Gentlemen, you will find these remarks just, and will readily conceive that it is only by long experience that the instruments which I now present to you were rendered advantageously applicable, and that it is only by following the same arduous route, and thus acquiring useful lessons, that others should consider themselves competent to modify them. As a proof of this, the case just alluded to induced me to make the most minute researches as to the best quality of metal to select, the most favorable manner of developing great power in the small instruments which the urinary organs compel us to employ; the size and weight of the hammer, and the different lengths of the lever; the best manner of dealing the blows, and, in a word, a vast number of particular circumstances, which, by close study and observation, have now rendered the system of percussion one of the safest and most efficient of the lithotriptic means.

After these general remarks on the little importance to be attached to modifications unsupported by successful facts, it only remains with me to give you some account of my own labours. I am among you, not for the purpose of entering into controversies, which I am ever anxious to avoid, but as a foreigner proud and happy to have been called upon by you to appear, and most willing to give you the informations that you may require on lithotripsy, and more especially on the *percuteur courbe.*

The early history of lithotripsy is familiar to all; it would, therefore, be a work of supererogation for me to pretend to afford information to such an enlightened audience: suffice it to say, that, as the result of the meritorious exertions of Gruithuisen, Elderton, Amussat, Civiale, Leroy, and others, lithotripsy, in 1824, was performed by means of an instrument possessing the properties of grasping calculi of moderate dimensions, and boring a hole in them every time the surgeon succeeded in seizing them. This was the three-branched instrument invented by Leroy, and in some points usefully modified by Civiale.

This instrument, tolerably well calculated to relieve patients whose bladders contained small spheroidal stones, I found inefficient and inapplicable when there existed larger calculi, which required to be bored repeatedly before they gave way, and consequently a too frequent repetition of the manipulations was necessary.

To remedy the disadvantages of having to make so many perforations in a calculus, I invented an instrument by which the stone, when seized, was at once hollowed out like an eggshell. This shell was much more easily comminuted, either by the instrument already in use, or by any other that might be found more applicable. With this excavating apparatus, the calculus was more efficiently acted upon, and more readily broken, in proportion to its greater degree of sphericity. The concave portions of stone resulting from the excavation were, however, with difficulty broken down with either of these two instruments: this induced me to construct the *brise coque,* which, by means of two strong branches, of which it consisted, rapidly comminuted these flat and concave fragments.

By means of these three instruments, it was possible to comminute small stones; to excavate, and sometimes break down, large spheroidal ones, and to pulverise the fragments with rapidity. But even these means were found inefficient in cases of flat and oval calculi of considerable size, which are so often met with in the human bladder; and also in those cases where there was still to break the shell of a large and very hard spheroidal calculus, which had been before excavated. It was therefore necessary to search still further: in this I was materially assisted by the experience I had acquired, and the result of my studies was the discovery of the system of percussion and the *curved percuteur à marteau.*

About six years back, whilst operating publicly upon a patient with the excavating apparatus, at the Hôtel Dieu, in Paris, just as the stone was seized and the perforator was about to be brought into action, I perceived that I had forgotten the pulley. Finding that the drill bow was of no use, it struck me that, since the instrument was firmly maintained by the fixed point, sharp blows might with perfect safety be directed, by means of the perforator, against the stone, which might thus be comminuted. This was accomplished, and the instrument was then closed and withdrawn. The next day the patient voided a much larger quantity of detritus than could have been expected from so simple a manœuvre.

Such, Gentlemen, is the first idea I had of percussion.

In another operation performed publicly about two years ago at the Greenwich hospital, I, for some time, tried in vain to break down a very hard spherical calculus which had been excavated. The stone being much weakened by being hollowed out, it struck me that it might be broken with a three-branched instrument, if, instead of merely applying its boring action, I could devise the means of directing against the calculus, through the medium of the drill, the powerful shock of a hammer. This was accomplished by adapting to the instrument this particular piece, which was called a support, and was intended to prevent the blows of the hammer from causing the internal tube to slide up the external canula, and thus occasion the expansion of the branches and the dropping of the stone from their grasp. (The support adopted to the three-branched instrument was here presented and explained.)

By so disposing the instrument, the stone was completely broken; but not without putting the patient to considerable pain, for being badly supported by the hooked extremities of the branches, it communicated more or less to the bladder, the vibration resulting from the blows of the hammer. It was therefore necessary to discover some other means.

Such is the second fact, which still more forcibly than the former induced me to turn my attention to the *system of percussion.*

Finally, nearly two years ago, in an operation performed upon a reverend gentleman, whose bladder contained several small calculi, I employed the three-branched instrument, but replaced the drill bow, by the application of a hammer. It was evident that this was not only a more rapid method of proceeding than the slow and gradual boring action, but that the blows of the hammer reduced the stone to a soft gravelly sand, instead of forming a very fine powder, which is liable to adhere to the coats of the bladder, and be evacuated with difficulty.

This third fact tended to convince me still more thoroughly that percussion might be most advantageously applied to lithotripsy, and pointed out to me still more directly the necessity of finding suitable means of bringing this system into practice.

Large spheroidal calculi, by presenting almost equal radii, appeared in perfect relation to an instrument destined to excavate them by a rotatory movement; but flat and oval calculi, by their great inequality of radii, were proportionately ill adapted to this system. In the same manner as the physical properties of spherical calculi gave rise to the idea of acting upon them by excavation, so the shape of flat and oval calculi clearly indicated the advantages to be derived from applying to their comminution the system of percussion. All flat and oval calculi present two surfaces, and it was evident that, in order to seize and hold them well, the instrument constructed for that purpose must consist of two opposed planes, which could only be obtained by means of two branches.

As the necessity of seizing and holding flat and oval stones required an instrument consisting of two branches, so the necessity of comminuting these stones required that these branches should have a curved direction: for, to act upon a stone by percussion in the interior of the bladder, the stone must be firmly supported by an immoveable plane, whilst a moveable one is forcibly propelled against it. But, in order to effect this in the human bladder, where the size of the instrument is limited to three or four lines, and where we are compelled to transmit the force of percussion through the entire length of the urethra, it was indispensably necessary that the planes retaining the calculus should be perpendicular to the straight portion of the instrument which remains in the urethra. Hence we see the absolute necessity of giving a curve to the instrument.

Thus it will, I think, appear evident that previous observations furnished me with the idea of developing in an instrument the powerful system of percussion; and that logical deductions induced me to make it consist of two branches, and give these branches a curved direction, rather than a desire to imitate other instruments, which were not even destined to act by percussion.

These were the principles on which I constructed the curved *percuteur*, and, if you examine it, you will find that it consists of two planes, which, by means of a curve, become perpendicular to that straight portion of the instrument which remains in the urethra. It is by bringing these planes together that a flat or oval calculus is seized and firmly held; and it is by propelling the moveable plane towards the immoveable one, by the active power of a hammer, that a calculus interposed between them is comminuted with the greatest facility. The stone is by these means reduced to a greater number of fragments, in proportion to the width of the planes.

You must still be well aware, Gentlemen, that, however perfect the instrument may be rendered, it would be of no sort of use without the assistance of one of my earliest inventions: I mean the rectangular bed, and the *point fixé* (fixed point), which was devised for giving perfect immobility to the instrument.

As was before mentioned, the *percuteur* was to present a moveable and an immoveable plane: well, it is by means of this fixed point or support, placed at the anterior part of the rectangular bed, that the perfect and indispensable immobility of the posterior curve of the instrument is obtained. It is this fixed point which allows the safe application of the power of a hammer to destroy calculi in the interior of the human bladder; a method of operating which, but two years back, was far from being looked upon as likely to contribute to the relief of one of the most serious maladies to which the bladder is liable.

This instrument completes the series of means by which I perform the operation of lithotripsy, and it was employed for the first time in London, on the 31st May, 1831, in presence of Sir Astley Cooper, Mr. Travers, and my friend Dr. Negri: and since this period I have, with this instrument, and before numerous members of the medical profession, relieved a sufficient number of patients to justify me in considering the *percuteur* one of the most valuable and efficient of all the lithotriptic agents hitherto employed.

In conclusion, Gentlemen, I have now only to show you the mechanical action by which the *percuteur* comminutes a calculus, and to beg the favor of the company of the president, and that of any other five or six gentlemen of the Society, (that being about the number that the patient would feel pleasure in seeing,) the day after to-morrow, at any hour that shall be convenient, in order to see the instrument employed on the living subject. I shall then, I hope, be enabled to give you a favorable and more complete idea of this new method of operating.

P.S. Twelve members of the Society, including the four presidents, having been invited, witnessed the Baron operate with his percussor. The calculus was seized with the greatest apparent ease, and the gratification expressed by all on *hearing* the stone crushed by the successive blows of the hammer, and subsequently *seeing* the fragments pass away by the urethra, was extreme. The stone was entirely destroyed in three or four sittings, altogether not occupying above twelve or fifteen minutes, and the patient is now quite well. He seemed to suffer very little uneasiness during the operation, and stated that he scarcely felt any thing of the vibrations produced by the hammer, and that passing the instrument gave him less pain than he had frequently suffered before from the introduction of the simple sound.

On Saturday, the 22d December, Baron Heurteloup presented, through Mr. Burnett, to the Westminster Medical Society, the patient referred to in the above report. He is entirely cured of his complaint; has no symptoms at all remaining; and he shewed to the members the fragments of the stone which had been comminuted by the percussor.

MISCELLANEOUS.

Observations on Parturition, taken from a Lecture delivered at the Theatre of Anatomy and Medicine, Marsden street, Manchester, October 3, 1832. By JOHN ROBERTON, one of the Surgeons to the Lying-in Hospital.

It has always been the policy of those who decry man-widwifery to instance the ease and safety of parturition in brutes, and in women amongst savages; and thence to infer, that the same process in civilized society would be equally safe and easy, were it only left (as they contend it ought) to the efforts of nature, and the assistance of matrons. These objectors, it would appear, forget that the practice they recommend was universally followed, in every country in Europe, till little more than a century ago; and that it was gradually abandoned, apparently, through the influence of increasing humanity and intelligence.

The assumed safety of parturition in brutes, of which I shall speak first, involves considerable fallacy. In brutes, it is true, we discover a wonderful degree of perfection in the performance both of the organic and animal functions. But this can be said of them in the wild state only. In that state they rarely exhibit varieties in any respect; that is to say, they very rarely deviate from the primal type of the species to which they belong. In colour, form, habits, and what is of much importance in the present argument, size, they are produced the same in successive generations. In a herd of bisons, for example, amounting perhaps to many thousands, it is generally impossible to detect even a single instance of deviation, in regard to colour, from the natural dun. In our common domesticated animals, a similar uniformity of type is soon produced, when they are turned loose to breed in the wilderness. This is seen in the horses and cattle which the Spaniards, selecting from the various breeds of their own country, introduced into the savannas of the new world. There they are found, in vast herds, not, as in the domesticated state, of various colour, and size, but of a brown bay, a colour common to a great number of wild quadrupeds; and in other respects presenting the uniform features of *feræ naturæ*. These circumstances naturally lead us to infer that monstrosities, as well as diseases, must be unknown among wild animals, an inference near the truth; yet we shall err, in regard to this point, if we venture to generalise without a careful examination of facts; for although it be true that monstrosities and diseases are extremely rare in wild animals, various instances of both have been known, and, were our opportunities of observation greater, probably we should discover more. Camper, a high authority, assures us that he had in his possession specimens of malformation belonging to every species of animal: among others, a gazelle with two heads; also a serpent and a tortoise, each with two heads; and a lizard with the two hinder feet in one. In the great work of Daubenton, examples, I believe, are given of a similar kind. Of the diseases of animals, in their wild state, we are not likely to know much; yet we are not without a number of observations on this point, for which I refer you to the works of Camper. I will merely mention one instance, on the authority of Adair. In the year 1766 an epidemic malady prevailed among the wild beasts, particularly the deer, in the remote woods of West Florida. The Indians, in their winter's hunt, found several lying dead; some in a helpless condition, and others fierce and mad.

The condition of domesticated is extremely different from that of wild animals. No sooner are the natural habits of animals modified by the influence of man than a great variety of changes rapidly ensues. Each particular species soon presents, within itself, remarkable diversities, in colour, instinct, figure, and size. They now become liable to numerous diseases; and exhibit likewise almost as great a variety of congenial imperfections as man himself. But of all the organic changes to which they are subject, none is more prominent and worthy of our attention than that which respects the generative system. Frequent sterility now succeeds to uniform fecundity, and abortion, in some species, becomes so frequent, under particular circumstances, that the disposition is even thought to be propagated by a specific contagion. Be this as it may, it often pervades an entire dairy: and is extremely difficult of remedy. So far, again, from bringing forth their young with uniform ease and safety, the mortality resulting from parturition, under certain circumstances which I shall specify, is incomparably greater than it is in our own species. And even when the circumstances are of the most favorable kind, this act is attended with more or less pain, and, occasionally, with risk to life.

Without enlarging on the subject of comparative obstetrics, (although I must be permitted to say that I regard it as one of high interest to the student of midwifery,) it may be well if I make a few remarks, and state one important fact respecting it, derived from a practical person every way worthy of credit.*

Of course, those domesticated quadrupeds only which bring forth one, or not more than two or three young at a birth, call for remark. In such as have a numerous litter, as the sow, the young are individually so small, relative to the size of the mother, as to preclude almost the possibility of causing much difficulty in the birth. Notwithstanding this, I have known parturition fatal both to the cat and the bitch, which, as you know, have a numerous offspring.

It may, I think, be regarded as a law, that the paturient act, in domesticated animals, is easy or otherwise, in proportion as they are subjected to a more or less laborious life. Hence the mare, which is seldom permitted to be idle, rarely dies in parturition. It is in the cow and the sheep, particularly the former, that the act of bringing forth their young is so often attended with difficulty, and even with fatal consequences. In ,country dairies, where the cow is daily abroad in the open air up to the period of calving, and feeds upon herbage, parturition is comparatively safe and easy; less so, however, I am inclined to think than in mankind; but in town dairies (you are aware that in most great towns very large dairies are kept,) the act of parturition is incredibly dangerous, so much so that it is seldom the dairy proprietor chooses to keep the same cows for more than one year. During each season he sells off his stock, and supplies their places with cows in-calf, purchased from the country farmer; and these he does not admit into the cow-house till they are within eight or ten days of the period of calving. When, on account of her good qualities, he is induced to retain a milch cow year after year, the risk in parturition, and from its consequences, is reckoned equal to one fourth of the value of the animal.

Thus we find that in town dairies, where the state of the cow is wholly artificial, (that is, where she is never turned out to take either air or exercise, and is fed not on herbage, but chiefly on warm boiled grains,) parturition is attended with extraordinary risk; a risk fiftyfold greater than in the human kind, even under the most unfavorable circumstances that are known.

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* The individual alluded to was for some time the superintendent of a dairy in the neighbourhood of Edinburgh, consisting of about three hundred cows.

The next arguments on which the opponents of midwifery, as a science, found their objections, is the ease and safety of labour among such savages as the American Indians and the New Hollanders, where, say they, men-midwives are unknown, and woman, like every other animal, brings forth her young by the aid alone of that all-sufficient midwife, nature. Whether or not it be true that women, in this state of society, bear children with more safety than those of our country, we shall presently inquire. I readily admit, however, that the women of savages experience less pain during parturition, and, comparatively, still less danger and suffering in the puerperal state, than the women of civilization. This is owing to a variety of causes which may easily be pointed out. In a rude condition of society, a great proportion of females, and especially such as are feeble and deformed, are destroyed in infancy. This practice obtains, more or less, in perhaps every tribe of barbarians of whose manners we possess any knowledge. Hence, of course, the healthy, vigorous, and well-formed alone are reared, and live to become mothers. The life also of women, in such a condition of society, is incredibly hardy and toilsome; and this, by at once invigorating the organic frame, and limiting and repressing the influence of the mind on the body, renders them of a singularly irritable constitution, almost in the degree of wild animals. Far less sensible to pain than the civilized portion of their sex, they speedily recover from severe wounds, and other bodily injuries, with little or no sympathetic fever. It is of such women as these that James, the scientific narrator of the American expedition from Pittsburg to the rocky mountains (when speaking of the Indians in their native wilderness) remarks: "During pregnancy the squaw continues her usual avocations, and, even in its most advanced state, she neither bears a lighter burden on her back, nor walks a shorter distance in a day, than she otherwise would. If on a march she feels the pains of parturition, she retires to the bushes, throws her burden from her back, and, without any aid, brings the infant into the world. After washing in water, if at hand, or in melted snow, both herself and the infant, she immediately replaces the burden upon her back, weighing perhaps between sixty and one hundred pounds, secures her child upon the top of it, protected from the cold by an envelope of bison robe, and thus hurries on to overtake her companions."

If we are to believe many who have lived among barbarians, and written of their habits and peculiarities, childbirth in them is uniformly easy and expeditious; nearly as much so as the performance of the simplest of the animal functions. A considerable variety of recent, credible, and highly valuable evidence on this point, however, (furnished chiefly in casual hints and allusions, which is by far the most unexceptionable kind of evidence,) leads me to form a very different conclusion. So far is parturition from being easy, expeditious, and safe, in every instance, we have reason for thinking that truly difficult labours are proportionably as numerous with them as in our own country. Where there is no malposition of the fœtus or other impediment, no doubt parturition is a lighter affair with the barbarian than with the European. Of this, speaking generally, there can be no doubt; and the reason I have already briefly stated: but, in exemption from the usual causes of impeded labour, properly requiring the aid of science for the safe and speedy delivery of the patient, I believe there is either no difference at all, or, if there be, it will be found in favor of the greater exemption, from such causes, of women in a state of civilization. The blows and other ill usage in various ways which the women experience at the hands of their husbands, and the heavy burdens which they are in the daily habit of carrying up to the last hour of utero-gestation, cannot, in all cases, fail in producing either malposition of the fœtus, or injury to the connexion between the fœtus and the mother. Besides, although it be true that few instances of decrepitude, or of other defect in the bony system, are found in a rude state of society, yet there is no doubt that such defects do exist. M. Rollin, surgeon, in the Voyage of La Perouse, in his account of the physical peculiarities of the natives of California, assures us that he did not see among them one instance of rickets; and a similar remark is made by many observers regarding other barbarians: but what of this? A traveller might visit, and attentively survey, an extensive district of our own country, and behold a far more numerous population than M. Rollin, and the others I have alluded to, saw, and yet, probably, not discover a single case of hunchback, or rickety deformity. As a set-off to such sweeping observations of travellers, I may mention a few facts that are brought out, incidentally, in the narratives of some of the most credible authorities we possess, respecting the ruder portion of our species. Thus, when describing the wild tribes bordering on the Rocky Mountains, Mr. James informs us that in the Oto nation they saw a deaf and dumb boy; an adult with a curved spine; and another with an inflexible knee, the leg forming a right angle with the thigh. Among the the Kaskias they saw likewise one old woman with a distorted spine, who, Mr. James remarks, when young, had probably suffered from rickets. Scrofula, the party found, was not uncommon. In Captain Lyon's Journal of his Voyage to the North Pole, mention is incidentally made of an Esquimaux boy, of five or six years old, who, in addition to mental imbecility, was dumb, had rickets, and epileptic fits. In the account of the missionary voyage of the ship Duff to Otaheite, (this was at a period when the islanders had as yet borrowed nothing from civilization,) the writer remarks, that a person knock-kneed or bow-legged was rarely to be found. His party saw only three hump-backed children in the whole island, and they were boys. It would, of course, be vain to conjecture how many deformed girls the barbarity of the natives may have consigned to the grave, beyond the observation of the missionaries. In speaking of the natives of Tongataboo, Captain Cook remarks, that they have few natural deformities. He, however, saw two or three with the feet bent inward. By a little more industry in searching for similar facts, others, I dare say, might be discovered; but these are sufficient to demonstrate the probability, that distortion of the pelvic bones may exist in women of even the rudest tribes of whom we possess any knowledge.

But is it really true that barbarian women have always easy and safety parturition? The contrary, I am inclined to think, will be found true. I have already admitted they suffer very little from the effects of labour, just as they would suffer little from a severe accident, or a surgical operation. But in a hundred instances of labour among the Indians of the Rocky Mountains, or the New Hollanders, I see no reason to conclude that the proportion of preternatural cases would be found to be smaller than in Europe: perhaps it would be found to be greater. Although minute and specific information on this point is not to be attained, I have collected a number of remarks more or less directly bearing upon it. Long (a noted fur-trader), in his book entitled "Voyages and Travels among the American Indians," when descanting on the fortitude of the savages, mentions incidentally the fact of a young woman, of the Rat nation, being in labour a day and a night without uttering a groan; the force of example acting so powerfully on her pride as not to allow her to express the pain she felt. Another similar fact is stated in the Voyage of Clarke and Lewis up the Missouri. The wife of an Indian of the party was in labour, and suffering considerably, when one of the Indians gave her as a remedy some of the rattle of the rattlesnake, in powder, pretty much as we should give the ergot of rye. In Hearne's Journal of his Expedition to the Northern Ocean, he casually says, "here (mentioning the name of a place) we were detained two days, owing to one of our women being taken in labour. The instant that the woman was delivered, which was not till she had suffered for near fifty-two hours, the signal was made for moving." Mackenzie, also, in his well-known Travels in the extreme North of America, incidentally remarks, that, on a particular time, the Indian hunter attached to the party returned, after a temporary absence, accompanied by his wife, leaving behind him his mother-in-law in a helpless state, with three children, and in labour of a fourth. It came out that she had been left "in a state of great danger." In the scientific expedition to the sources of St. Peter's River, its historian, Capt. Keating, states respecting the Potawatomis, a tribe with which he associated for some time, and concerning whose manners his party gained much curious information, that labour was seldom fatal among them, but that many instances had occurred in which the child was so long in being born, that it was putrid when expelled. The same writer informs us, that, in answer to inquiries made among a tribe of Indians, called Sanks, concerning the usual duration of labour, he was told that the pains of labour continued, in some cases, as long as four days. In general, however, labour continued a very short time. From the Dacotas, another Indian tribe, the same party learned that parturition among them, though generally easy, in some cases lasted from two to four days. In Franklin's Overland Journal, we have another incidental notice of labour in an Indian. A Chipawyan woman fell in labour, in the woods, of her first child, and, on the third day after, died. In Krantz's account of the manners of the Greenlanders, we have an allusion to parturition which deserves mention. He is speaking of the opinions which these savages hold regarding the qualifications that entitle them to gain admission to heaven: among others, those, it appears, find entrance who had been drowned in the sea, or have "died in childbirth."

The next fact I shall mention has reference to a people the lowest of any in the scale of civilization; I allude to the New Hollanders. Among them a man is not permitted to approach where the act of parturition is being performed. Collins, an excellent observer and writer, informs us, that he had the curiosity to get a European woman to be present at a native labour. By this person it was remarked that, while one female poured cold water, from time to time, on the abdomen, another was busy performing some trifling charm. How long the labour lasted is not said; but after it was over, the poor woman appeared much exhausted, and fell across a fire that was in the place, happily without receiving injury.

In concluding the list of facts in support of this branch of my argument, I have the gratification to present you with what I cannot but regard as valuable and interesting information concerning parturition, as it occurs in the islands of the South Sea, privately furnished me by Mr. Ellis and Mr. Bourne, missionaries, who resided (particularly the latter) a great many years in those islands of the Pacific where missions are established. In order to elicit the information I wanted, in a clear and precise form, I took the liberty of putting in writing the following questions, which I shall give you seriatim, with the replies:

1st. Is parturition, in general, speedier, easier, and safer, in the South Seas, than it is among our own peasantry? Mr. Bourne's reply: "Parturition in the South Seas is, in general, easy, speedy, and safe, even to astonishment. Immediately after delivery, the women are generally able to arise, take their infants in their arms, and bathe themselves and infants in some neighbouring rivulet. A servant to one of the missionaries, whose business it was to catch and milk her master's goats, was confined with a child on the Sunday evening, and on the Monday morning caught and milked the goats as usual." Additional reply by Mr. Ellis: "Parturition is remarkably easy: many instances of this came under our notice. A servant of ours was engaged at washing one morning; labour came on about nine o'clock; she went home; and in the evening, walking, came again, with the child in her arms. Formerly they used, immediately after delivery, to sit upon a pile of hot stones covered with herbs, and when this had produced profuse perspiration, would rush into the sea within half an hour after. I am disposed to think civilization does make childbearing more difficult, or makes the mothers feel its inconveniences more."

2d. Have very protracted, dangerous, or fatal instances of childbearing come to your knowledge? By Mr. Bourne: "Protracted, fatal, and dangerous instances of childbearing have come to my knowledge; although such are not very frequent." By Mr. Ellis: "Protracted and dangerous labours have generally been occasioned by mal-presentations; the most have been shoulder presentations, or the protrusion of the arm."

3d. Have you observed parturition to be more or less difficult according to the state of civilization: easier, for example, in New Zealand than in Otaheite? By Mr. Bourne: "Parturition is as easy in Tahiti as in New Zealand."

4th. Do the South Sea women employ a class of females in any respect answering to that of our midwives? By Mr. Bourne: "No class of women are employed in the South Seas answering to midwives." By Mr. Ellis: "There were a number of women celebrated for their skill in aiding difficult labours, but in ordinary cases their aid was not sought."

5th. In protracted and difficult labours, what means do they use to hasten delivery? By Mr. Bourne: "In protracted and difficult labours, no means are used to hasten delivery. Every thing is left to nature. The missionaries have saved many in difficult labours, that otherwise would have died. I knew of one fatal instance, and many others would have occurred but for the missionaries." The reply of Mr. Ellis is in a trifling degree different: "In difficult labours, the patient was fixed on two stools, while a friend supported the back: or, the patient sat on the extended thighs of an assistant, while another person endeavoured by pressure, and other mechanical means, to promote delivery. We have reason to believe several must have died in childbirth but for the aid of the missionaries."

After so copious an induction of facts, I need say little more, I presume, to convince you that the act of parturition, among the women of rude nations, is not, in the absence of obstetric science, uniformly safe and easy: but, on the contrary, notwithstanding the degree of perfection in which the organic functions in general, and of course the uterine, are performed in them (in which respect they are more favored than the women of civilization), protracted, and even fatal labours are at least equally numerous as they are with us.—*Med. Gazette.*

MIDWIFERY.

Rupture of the Membranes, for the purpose of bringing on Labour before the full Period of Utero-Gestation, in Cases of Deformity of the Mother. (Gazette Médicale.)

THE question has often been discussed, whether, when women are so deformed that it would be impossible to deliver them at the full period of pregnancy, it would not be more prudent to bring on labour at the eighth month. In 1756, the most celebrated accoucheurs of London consulted upon this subject, and determined the question in the affirmative. Since that period the membranes have been frequently ruptured with a trocar, in order to bring on labour, in England, Holland, Italy, Germany, and France. After the rupture of the membranes, labour comes on, and the management of it is conducted in the ordinary way. In seventy-four cases, REISINGER met with only one which proved fatal to the mother; forty-four of the children were born alive. In Germany and Holland, out of thirty-four cases, only two women died; and the fatal result in these instances did not appear to depend upon the effect of rupturing the membranes: nineteen of the children survived. In Paris, in 1829, six labours were thus brought on; all the women did well, and only one child was lost. There can be no doubt that the operation of rupturing the membranes offers the mother a much greater chance of safety than any other means we could adopt, when the pelvic aperture is so contracted as to prevent delivery at the full term of pregnancy.—*Dict. de Médécine, from an article by* Mr. DEZEIMERIS.

TOXICOLOGY.

Curious Case of Poisoning with Arsenic. From Dr. Elliotson's Lectures.

It is this peculiar effect of arsenic on the eyes which made me suspect the other day that a whole family had been poisoned with arsenic. I was consulted on a very curious set of cases. A whole family was seized with nausea and vomiting, and every one of them had watery eyes. This continued some time; I found all the maid-servants with watery eyes, and that they had had nausea and vomiting. There were four or five children also in the same state, as also was the lady of the house. The husband happened to be out of town. None of them had a pulse under 120, and in some it was as high as 160. The children were all going about the house, and the servants were engaged at their work. The man-servant, as well as the maids, all had rapid pulses with watery eyes. On looking at their tongues, I found they were red and foul, and they had also had thirst, and a sensation of heat at the stomach. I endeavoured to ascertain whether persons in the neighbourhood were in a similar condition, but that was not the case, not even with their nearest neighbours, and therefore I presumed the affection was not owing to the atmosphere. Then respecting the ingesta, I could discover nothing that was at all capable of explaining the symptoms. I found that they all had the general heat of the body which I have mentioned, as well as of the stomach and eyes; in fact, a general inflammatory state.

Seeing these things, and finding that the watery state of the eyes and the nausea had been going on day after day, I suspected that they were under the influence of arsenic. When arsenic produces those constitutional effects which it is necessary to remedy, you find bleeding by far the best method that can be adopted. When arsenic has been taken into the stomach, you endeavour to get it out as well as you can, but after that it is necessary to bleed on account of the gastritis, and the inflammatory state of the system. When you have got it all out of the stomach of the patient, there may still be the greatest danger, not only from the inflammatory state of the stomach, but the general inflammatory state of the body: the great remedy for this is bleeding. I felt convinced that this family must have suffered from arsenic, and they were bled, and some proportionately relieved.

The water which they drank was examined by several eminent chemists, and no arsenic could be found in it, but the persons who had lived in the house before had been mixers of colours, and some of their combinations contained arsenic; and, before they quitted the house, it turned out that they had deposited in the kitchen, and in the garden all round the house, a great quantity of arseniate of copper. I did not learn this at first, and I could not imagine where the arsenic came from, but when the husband returned home and stated this, on relating the case to an eminent chemist, he told us that he was satisfied that water coming to the arseniate of copper would produce arseniuretted hydrogen, which was let loose, and produced the effect on the family. He considered that the arseniate of copper was calculated to become pernicious by water being mixed with it. The situation of the house was damp, and water had free access to the arsenic contained in the colouring matter, which had been deposited only last summer under the kitchen and every part of the house. Several barrows full of this stuff were removed. It was an eminent chemist who informed us that, under all the circumstances, he had no doubt that arseniuretted hydrogen had been disengaged, and I had felt satisfied, from the effects I saw, that arsenic must have been the cause of all the symptoms. No medicine was given, nor was anything of the kind required, as the arsenic was not in the stomach, but had pervaded the whole system. It was altogether an extraordinary occurrence, and I never witnessed anything of the kind before. The whole family were affected. All had a pulse from 120 to 160, and the whole of them were affected with a running of the eyes, but they all got perfectly well, except that pain in the limbs came on after they had appeared well for some time.—*Lancet.*

INTELLIGENCE.

King's College, London. The Medical School will open for the Spring Courses, on Monday, the 21st instant, in all the classes, excepting the Botanical, which will not commence till March.

Professor Lyell will begin a course of lectures on Geology in April.

Royal Institution. The evening meetings commence on Friday, the 25th instant, and the lectures towards the close of the month.

Professor Burnett will deliver a short and popular course of lectures on Botany here after Easter.

Adjudication of Prizes for a Knowledge of Botany.

The Society of Apothecaries have laboured, zealously and wisely, in the improvement of medical education; and, by the well-judged exercise of the powers intrusted to them, the Courts of Assistants and Examiners have done more towards raising their department of the profession to the rank it deserves to hold, than could have been anticipated in so comparatively short a time.

To their patronage one branch of science is especially beholden; for, without their assistance, the means of its pursuit could scarcely have been within the reach of the London student: we mean Medical Botany. Convinced of the importance of the study, and perceiving the general want of materials for demonstration, they have most liberally opened the Chelsea Botanic Garden, which they have so long supported with so many sacrifices, and at such a great expense, to all medical students without exception; and they annually offer a gold and silver medal as a further encouragement for the prosecution of this study, far too generally neglected.

These medals were awarded on the 4th of December to Mr. Thomas H. Cooper, of the London University, and Mr. Philip K. Weston, of King's College.

We should have contented ourselves with the simple announcement of the fact, and honourable record of the names of the successful candidates, had not our attention been directed to the reports which have appeared in the public prints, some specimens of which we subjoin, and from these we learn that "this year was one of more excitement than usual," in consequence of the King's College students coming into the field for the *first time*, as competitors with those of the London University. As the College has only been open *one* year, and its alumni, of course, being at present tyros, we did not suppose that pupils of twelve month's standing would have caused so much excitement among the veterans of the elder sister; and we doubt not the Collegians are well pleased to find that, in their first attempt, made at the very first opportunity they have had, and after only one year's study, they have carried off the silver medal from a University student, of at least equal, if not longer standing, and made another of three or four times their date doubt whether he should gain the victory: indeed, we learn that the race was not won by much more than half a neck.

There is one part of the first of the following reports which seems obscurely worded, if not intentionally ambiguous. It entirely omits to mention that the silver medal was awarded to Mr. Weston: and it states that "Professor Lindley has the *entire superintendence* of the science of botany at the London University," which, with the plural mention of "professors" at the King's College, might lead to the supposition that the botanical professor there has not equally the *entire* superintendence of his department in that institution. Again, it is said that the College *Professors* were most sanguine in their hopes of success. Now, we cannot suppose that reference is made to the professors of any other science, and yet there is but one professor of botany in the College; and he, we are assured on unexceptionable testimony, never expressed any such sanguine hopes. We know he stated that there were some students in his class who would compete with every probability of success with any pupils of *equal* standing: this opinion he expressed before the examination, and we know he retains it still: indeed, the results of the competition has proved it to be correct; for Mr. Cooper was not the only candidate that the University sent up; and, were it wanted, the one series of answers which were wholly, and the other which were partly read, might be given as further proof.

From the Morning Chronicle.

"The London University has recently gained an additional laurel in having awarded to one of its students in botany, (Mr. Cooper,) after a most minute and strict examination at Apothecaries' Hall, the gold medal. The competitors for this grand prize were the students of King's College, the professors of which were most sanguine in their hopes of success. Professor Lindley has the entire superintendence of the science of botany at the London University."

From the Lancet.

"On Tuesday the annual medals for botany were thus distributed to the successful candidates by the Society of Apothecaries:

"The gold medal, to Mr. Thos. H. Cooper, of Lewes, Sussex, student of the London University.

"The silver medal, to Mr. Philip King Weston,* of Boxhill, Surrey,† student of King's College.

"The gold medal had on one side the head of Linnæus, and upon the other the figure of a youth (possibly emblematical of the successful candidate,) lying at the feet of Flora, who is recommending to his notice, Ray, Linnæus, Jussieu, and Sloane, whose names are engraved upon a monument by her side. The whole is well executed; its nominal value is £10., and is certainly worth, at least, that sum: it is by Wyon, of the Mint. The silver one is from the same die. The giving of these medals is one of the very few acts, if not the only one, which the Apothecaries' Company contributes to promote the zeal of medical students; and this causes much emulation among them. This year was one of more excitement than usual, in consequence of the examination being the first at which the King's College students have attempted to contest the gold medal with those of the London University, who have carried it off each year it has hitherto been given; this making the third time.‡

"The answers to the questions given by Mr. Cooper, the successful candidate, were in the highest degree creditable to that gentleman.§ The manner, also, in which Mr. Griffiths‖ and Mr. Valentine distinguished themselves in displaying their knowledge of vegetable anatomy was highly gratifying to all parties. Indeed, the gentlemen of the London University are, we understand, all of them good botanists, and the King's College men will have hard work to beat their contemporary students, and be no mean botanists either."

From a Correspondent in the Medical Gazette.

"The gold and silver medals annually offered by the Society of Apothecaries to all students (not being apprenticed to members of the Society,) were, on Tuesday the 4th instant, awarded to Mr. T. H. Cooper, of the London University, and Mr. P. K. Weston, of King's College.

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* "Mr. Weston obtained the first prize at King's College last year.

† An error, for Hare Hall, Essex.

‡ This we believe to be an error; for, if our memory does not betray us, it was a student of the London *Hospital*, not of the London University, who gained the prize the first year.

§ "There were forty-four questions, for the replies to which three hours were given.

‖ "Mr. Griffiths obtained the gold medal last year."

"As these prizes are given, not merely for comparative, but for absolute merit and positive proficiency, (last year only one medal was decreed, the other being withheld,) it is highly creditable to these young men, and gratifying to their friends, to have such evidence of the right employment of their time, and to be thus honourably distinguished as the two best botanists that the metropolitan schools this year afford.

"Long before the examination took place, we heard that Messrs. Cooper and Weston were the favourite candidates; and from the former gentleman being a student of several years standing, and the latter of one year only, it was generally expected that the prizes would be awarded as they have been. We therefore think it unwise, and we are sure it must be contrary to his wishes, that the success of the gold medallist should be mentioned by his would-be friends as a triumph over his fellow candidate, to whom the silver medal was decreed. At any time, we should have thought such reports ungenerous: under present circumstances we think the exultation foolish; for, although the success of the senior student is highly honourable, it can scarcely be regarded as a triumph over a competitor so much his junior; and our veracious contemporary, when affirming that this was 'the first examination at which the King's College students have attempted to contest the gold medal with those of the London University,' would have done well to have recollected that the College was only opened in October 1831, so that it was the very first opportunity of competition which has occurred."

Mr. **Alfred Swaine Taylor** has been appointed the successor of the late Mr. **Alexander Barry**, as joint lecturer on Chemistry with Mr. **Aikin**, in the medical school of Guy's Hospital.

At a meeting of the Medico-Botanical Society of London, on the 11th ult., Sir **Anthony Carlisle**, a member of the Society, communicated to the meeting that he had just received a small quantity of the expressed juice of a succulent tree, of the genus Cactus, from the province of Senora, in the Gulph of California, which, it is asserted, upon the authority of three respectable gentlemen, actually cures Hydrophobia when this disease has taken effect. He (Sir A. C.) therefore conceived it of the highest importance that this reputed remedy should be made known to the medical profession and the public through this Society, in order to procure it a fair trial in the first case which might present itself: in furtherance of which object, the learned gentleman stated to the Society that he would gladly accompany any professional gentleman who might have the care of a case of hydrophobia, either in private or hospital practice, in order that he might report the effects of this remedy, and direct the administration of it according to the rules given to him.

OBITUARY.

Death of Rudolphi. M. Rudolphi died at Berlin, on the 29th November, in the sixty-third year of his age. He was highly distinguished as a practical physician, an ingenious experimental physiologist, and for many important contributions to natural history. His life was spent in the diligent cultivation of every species of knowledge which could secure him a perfect acquaintance with his profession, and his reputation as a man of first-rate talent was acknowledged and duly appreciated throughout the whole of Europe.

Death of Mr. Joberns. Mr. Joberns, for many years senior surgeon of the Middlesex Hospital, and inspector general of hospitals, died recently at Woodstock. Mr. Joberns' health had for some time been declining, and it was supposed by his professional friends that he was labouring under organic disease of the heart, and this opinion is strengthened by his sudden and unexpected death. We are intimately acquainted with many persons who long knew Mr. Joberns, and we have invariably heard him spoken of in terms of esteem and respect. As a surgeon, he had not, we believe, distinguished himself by any splendid or original contributions to our stock of knowledge; but he was nevertheless an able practitioner, and very fertile in medical resources when others had exhausted their means of relief. For some years before his death, he performed no surgical operations, but his opinion in cases of danger and doubt was always received by his colleagues with the respect and attention to which his long experience and great practical knowledge justly entitled him.

Our regret for the loss of Mr. Joberns is fortunately not increased by any doubt of the entire competency of the gentleman who will now have to perform the responsible duties of surgeon to the Middlesex hospital; for Mr. Arnott, at present assistant surgeon to the hospital, will doubtless become the surgeon without contest; but for the *probable* vacancy in the assistant surgeoncy there are three candidates in the field, namely, Mr. Alexander Shaw, Mr. Tuson, and Mr. Phillips.

MONTHLY LIST OF MEDICAL BOOKS.

[*Medical Works cannot be entered on this List unless a copy be sent for the purpose, the titles of Books having frequently been sent to us as published which have not appeared for weeks, or even months, after.*]

The Elements of Anatomy, by Jones Quain, B.M., Professor of Anatomy and Physiology in the University of London. Second Edition, *revised and corrected.*—8vo. pp. 812. John Taylor, London.

We announced the receipt of this excellent work in our last number, and we again place it on our list, for the purpose of informing those who have purchased it that, in consequence of several errors having accidentally passed uncorrected, some sheets have been cancelled. The publisher will be glad to exchange, without any additional charge, the uncorrected for the corrected copies; the latter may be known by the words "*revised and corrected,*" which have been inserted in the title page.

The Cyclopædia of Practical Medicine. Edited by John Forbes, M.D., F.R.S., &c., Alex. Tweedie, M.D., &c., and John Conolly, M.D., &c. Part XII. (published in Monthly Parts,) December 1832. Containing *Indigestion* (continued), by Dr. Todd; *Induration*, Dr. Carswell; *Infanticide*, Dr. Arrowsmith; *Infection*, Dr. Brown; *Inflammation*, Dr. Adair Craufurd, Dr. Tweedie.—Royal 8vo. pp. 107. Sherwood, Gilbert, and Piper; and Baldwin and Cradock, London.

A Treatise on the Urethra; its Diseases, especially Stricture, and their Cure. By Benj. Phillips.—8vo. pp. 317. Longman, London.

Elements of Surgery. By Robert Liston, Esq. Part III.—8vo. pp. 409. Longman, London; Black, Edinburgh.

A System of Materia Medica and Pharmacy, including Translations of the Edinburgh, London, and Dublin Pharmacopœias. By John Murray, M.D. &c. Sixth Edition, adapted to the present State of Chemical and Medical Science, by John Murray, M.D., F.R.C.S. E., &c.—8vo. pp. 886. Black, Edinburgh; Longman, London.

A much improved edition of a work which, even in its former state, had deservedly obtained an extensive circulation and great celebrity.

January 1st, No. I, The Principles and Illustrations of Morbid Anatomy, adapted to the Elements of M. Andral, and to the Cyclopædia of Practical Medicine, (with which it will correspond in size.) Being a complete Series of coloured Lithographic Drawings, from originals by the Author; with Descriptions, and summary Allusions to Cases, Symptoms, Treatment, &c. Designed to constitute an Appendix to Works on the Practice of Physic, and to facilitate the Study of Morbid Anatomy in connexion with Symptoms. By J. Hope, M.D., F.R.S., &c.—Large 8vo. pp. 23. Whittaker and Co., London.

A Short Statement, showing that, if the Allotment System were adopted, there would be no Excess of Population, no Necessity for Emigration, nor cultivating Waste Lands, nor for the Importation of Food. By J. Poole, Comm. R.N.—8vo. pp. 27. Westley, London.

A Treatise on the Diseases of the Liver and on Bilious Complaints; with Observations on the Management of the Health of those who have returned from Tropical Climates, and on the Diseases of Infancy. By G. H. Bell, F.R.C.S. E., &c.—8vo. pp. 152. Longman.

The Physician's Vade Mecum; or, a Manual of the Principles and Practice of Physic: containing the Symptoms, Causes, Diagnosis, Prognosis, and Treatment of Diseases; accompanied by a select Collection of Formulæ, with a Table of the Doses of all Medicines now in use. By Robert Hooper, M.D. &c. New Edition, considerably enlarged and improved. 12mo. pp. 400. Renshaw and Rush, London.

An excellent book of reference for students and junior practitioners.

APOTHECARIES' HALL.

Names of Gentlemen to whom the Court of Examiners have granted Certificates:

NOV. 29.
Richard Hargrave Brett
John Doughty Brookes, Wenlock, Salop
William Blathwayt, Louth
Frederick Chambers, Hackney road
Robert Dade, Great Yarmouth
Clement Edkins, Dorking, Surrey
John Foote, Tavistock street
Robert Hawdon, Morpeth

DEC. 6.
Henry Bowen, St. Albans
Henry Stanhope Illingworth
William Salter, Whitchurch, Herefordshire
Robert Stopford Taylor, Sheffield

DEC. 13.
Alexandor Angus, Greek street, Soho
John Crea, Whittingham
Robert Davis, George street, New road
Henry Goddard
Alfred Higgenson, Derby
James Henly Hicks, Plymouth

DEC. 20.
Charles John Brickwell, Banbury
George Alfred Davenport, Market Harboro'
John Enscoe
John Hunt, Thumby, Leicestershire
Charles Potter, Brockhurst, Hants

DEC. 28.
John Carter, Coventry
William Hall, Leatherhead.

METEOROLOGICAL REGISTER,

By Messrs. Harris and Co. Mathematical Instrument Makers, 50, High Holborn.

	Moon.	Rain gauge.	Thermometer.			Barometer.		De Luc's Hygrometer		Winds.		Atmospheric Variation.		
Nov.			9a.m.	max.	min.	9a.m.	10p.m.	9a.m.	10p.m.	9 a.m.	10p.m.	9 a.m.	2 p.m.	10 p.m.
20			48	53	48	29.51	29.48	79	79	SE	SE	cloudy	fine	fine
21			51	54	42	.40	.40	78	79	ESE	ESE	foggy		foggy
22	●		47	51	42	.57	.69	76	75	SE	SE			
23			48	54	48	.74	.71	77	75	SE	S			
24			52	56	44	.72	.71	75	75	S	S			fine
25			48	53	45	.57	.39	78	78	SW	SW	rain	cloudy	cloudy
26		.37	47	48	41	.36	.49	75	75	WSW	W	foggy	rain	fine
27			44	47	41	.51	.30	75	77	W	W	fine	fine	foggy
28		.08	43	50	42	.46	.62	75	76	W	SW	fine	cloudy	rain
29		.28	44	46	38	.42	.36	74	73	WSW	WSW	foggy	fine	cloudy
30	☽		42	54	43	.66	.53	72	75	W	S		rain	cloudy
Dec.														
1		.18	54	56	44	.60	.60	77	78	W	WSW		cloudy	fine
2			49	56	44	.38	.32	75	77	SW	WNW	rain	fine	cloudy
3		.12	45	48	43	.32	.43	70	70	WNW	NW	fine	rain	fine
4			45	52	41	.74	.92	69	73	N	N		fine	rain
5		.03	42	45	40	30.01	.94	72	74	N	WNW	foggy		rain
6		.14	44	46	42	29.83	.91	75	75	N	NNE	sleet	fine	fine
7	○		43	46	40	30.07	30.14	76	76	NNE	SSE	foggy	fine	cloudy
8			43	48	42	.14	.15	78	79	SW	WSW	fog		
9			45	49	46	.15	.15	81	82	WSW	WSW		cloudy	foggy
10		.03	48	50	42	.11	.13	81	81	SW	SW	foggy	cloudy	fine
11			45	49	45	.18	.22	79	79	SW	W		fine	fine
12			48	51	42	.23	.20	78	76	WNW	WNW	foggy	cloudy	foggy
13			45	49	41	.01	29.88	76	75	W	SSW			
14	☾		46	52	43	29.75	.72	75	76	SW	SW		fine	cloudy
15			51	53	36	.35	.68	79	77	SW	NW	rain	rain	fine
16			45	54	47	.56	.42	79	81	SW	SW	foggy	fine	rain
17		.12	52	55	42	.36	.30	80	78	WSW	SW	foggy	cloudy	rain
18			45	51	37	.36	.46	74	72	W	W	fine	fine	fine
19			39	42	35	.51	.51	73	75	W	W	foggy		cloudy

The quantity of Rain fallen in November, was 1 inch and 89.100ths.

THE LONDON

Medical and Physical Journal.

408, VOL. LXIX.] FEBRUARY 1833. [80, *New Series.*

"For many fortunate discoveries in medicine, and for the detection of numerous errors, the world is indebted to the rapid circulation of Monthly Journals; and there never existed any work to which the Faculty in Europe and America, were under deeper obligations than to the 'Medical and Physical Journal of London,' now forming a long but an invaluable series."—RUSH.

ORIGINAL PAPERS.

TRANSACTIONS OF THE MEDICO-BOTANICAL SOCIETY OF LONDON,

Printed under the Direction of the President and Council.

INAUGURAL ADDRESS.

Inaugural Address, delivered at a Meeting of the Medico-Botanical Society of London, held February 16*th*, 1831; PHILIP HENRY EARL STANHOPE, *President, in the chair.* By GILBERT T. BURNETT, Professor of Botany to the Society, and Lecturer in the School of Physic, St. George's Hospital, &c. &c. &c.

MY LORD PRESIDENT, AND GENTLEMEN:

As circumstances vary the relations in which men stand, the duties are varied they are destined to perform. Each step advanced, each height attained, as it expands their influence, in an equal degree extends their care. Posts of honour are not posts of ease, but are regarded in their truest light when they are viewed as stations of responsibility; and before attempting to fulfil the duties of such stations, all, who sincerely desire to discharge them with credit and profit to themselves and others, should endeavour clearly to understand their nature, and to become fully impressed with their importance. Since, therefore, being called to this honourable chair, I have laboured (not wholly, it is hoped, with fruitless effort,) to inform myself as to what must be required of the Professor of Botany to the Medico-Botanical Society; an office of no mean rank, in a Society of no mean importance: a Society, the bare mention of whose objects must immediately challenge our attention and regard, directed, as its exertions are, to the philosophic investigation of the distinctive characters and medicinal properties of plants; a knowledge by which, when fully gained, the power of physic will be much increased, and pain disarmed of half its terrors, by which *(Deo volente!)* the life of man may be much prolonged, and human misery may much be lessened.

As the avowed objects for which this Society was instituted, and the laws by which the Council govern, alike preclude all dissertations on purely botanical researches, topics upon which a botanic mind luxuriates, points upon which it loves to expatiate; of course, all comments on the laws of life affecting the development of the vegetable structure; all remarks on the wonderful metamorphoses, both regular and irregular, transitional and vicarious, which plants continually pass through; all disquisitions on the vital functions of these simplest organic beings; the assimilation of their food; the production of their peculiar principles; the reproduction of their species; their irritability; their seeming instincts; with many, many other curious and interesting physiological themes, though pregnant with information and replete with wonder, are all alike forbidden here. Botany being, to the Medico-Botanical Society, but one among several means by which it proposes to advance an ulterior object; hence, I must confess that my favorite study must not be allowed undue preponderance, and I submit to the decision, that, although a *means*, it is not *here* an *end;* it is one way to the science here held in view, (and a delightful flowery path it is,) but that it must not be mistaken for the goal itself.

Therefore, as these favorite topics would be here irrelevant, to a not less important, though less entrancing section must our attention at this present be directed, to one subdivision of one section of this extensive science, viz. Economic Botany; whence I shall be led to discuss the uses and properties of vegetables, more especially of medicinal plants, and medicinal preparations. Hence, in order not to wander from my province, and hoping to be set right by the Council if I greatly err, is it that I have resolved, in this my inaugural address, to trace, as it were in outline, the progress of medico-botanical science; for thus will be most clearly seen, not only the benefits it has bestowed upon mankind,—for thus will be most certainly foreshown, not only the blessings it has still in store, but also, from this conspectus of what has been already done, we shall be directed to what there remains for us to do: directed to that course which may most advantageously be pursued, and encouraged in those researches by which, in conjunction with his colleagues, the professor of botany may hope most efficiently to serve the ends, most rapidly to advance the objects, of your Society: for he feels, acutely feels, that, as an office is honourable, so, in an equal degree, does responsibility attach to him that holds it.

Gentlemen: As long as the human race have been subject to disease, as long as pain has been an evil, so long must means of alleviation have been sought, and so long must medicines have been prescribed and used. Rude, indeed, were the early essays of our art, and long must they have continued rude: the morning twilight of physic has been for ages dawning into perfect day; comparatively, it is not long since men, ignorant alike of the indications to be observed, and of the instruments by which those indications might be fulfilled, prescribed scarlet clothes for fever, because they both were red, and saffron for jaundice, on account of its yellow hue.

Much lately has been done in the investigation of diseases, their causes, their symptoms, and their effects; pathological anatomy has revealed many of the changes which various structures undergo, some of which morbid conditions impair the energies, and others are incompatible with the duration of life. But what avails it that the physician can trace by symptoms the successive stages of disorganization, as they proceed in structures concealed from view? what avails it that the surgeon can proclaim the appearance of such morbid alterations long before dissection unfolds them to the light? what avails it that both can foretell the impairment or destruction of vital parts, without they can at the same time learn to check the ravages of disease, and either to alleviate the sufferings of the patient or to afford him a perfect cure? Without such an application of this art, the means of obtaining it would to many be repulsive, and the science itself not a blessing, but a bane; as the foreknowledge of ills that could not be relieved would but aggravate the misery man is called on to endure. But such is not the opprobrium of our useful, and hence noble arts; for the theory of physic is founded on experience, and the benefits of its practice who can venture to deny! As sciences, medicine and surgery find few their equals; and as arts they are excelled by none.

Much, I repeat, has been lately done to advance our knowledge of disease, and something, though much less, to perfect our instruments of cure. These, however, are sister sciences, or rather their connexion is of a still closer kind: they are twins, which, as they are naturally, so for ever they should remain inseparably conjoined; and for the Medico-Botanical Society, whose attention is especially directed to this point, has the grateful task been left of perfecting this union: on it devolves the duty of steadying the arm of science, and placing surer weapons in her hands; i. e. of providing for physic new and more certain remedial means.

A circumstance which still shrouds medicine in mystery, must have been formerly much more perplexing than we find it now. Even, however, in the present day, it frequently involves the principles of our practice in obscurity; and hence some persons, ignorant of how many cases there are in which it approaches demonstration, have not scrupled to call physic a conjectural science; to define its object to be the calculation of chances, and its decision the balance of probabilities. I, of course, allude to the acknowledged difficulty of determining how far a cure should be attributed to the renovating powers of life, and how far to the remedial agents which art employs: for some diseases, and especially in some constitutions, will disappear not only without, but even in spite of the physician; whilst others, in other persons, or even in the same person at other times, not the most consummate skill can cure. Of this, the records of legitimate practice would afford us abundant illustrations; but the empirical artifices of the present day form still more familiar examples: to these I shall not particularly allude: some will *long* be notorious beacons.

From these sources of error, many useless, many nauseous, and not a few noxious, agents have, from time to time, been introduced, several of which have enjoyed an ill-earned fame; while some really efficient medicines have as undeservedly fallen into disrepute. Hence, likewise, can we account for many of those superstitious rites, anciently so mixed up with medicine as to have been esteemed an essential part thereof. Few persons will take the trouble of distinguishing the *post* from the *propter*; and, even to those who would, the power is oft-times wanting. A mind, patient in observation, and well disciplined to distinguish truth from error, does not commonly coexist with that instinct (shall I call it almost blind instinct,) for generalization, by which theories are planned, and systems raised. Allow an example to illustrate this abstract proposition.

Achilles, writes the poet, escaped unhurt, though long exposed to all a warrior's danger, (and so did others of the Grecian force, and so do many others in every hostile meeting;) Achilles at last was slain by an arrow which transfixed his heel, (and so have many others fallen by wounds in some especial parts, whether in the head, the hand, the heel, for weapons to each victim are not omnipresent;) but Achilles had been bathed by Thetis, (and so by most parents have their sons been washed;) yet it is fabled that the heel by which his mother held him was the only part unwetted; that heel, it is said, was pierced; and hence arose the fame of the antivulneriferous waters of the Styx. "POST *ergo* PROPTER *balneum salus.*"

Again, in times of general sickness, the Romans, with solemnity, elected a Dictator, for the especial purpose (and that alone) of driving a nail into the temple of Jupiter, and when afterwards the pestilence decreased, *post ergo propter malleum salus.*

Just as, at the present time, in countries where the plague prevails, an angel is believed to cast a drop of water on the earth, on the festival of St. John, after which day the plague is stayed, and to which the restoration of salubrity is attributed, rather than to the actual cause, viz. the great increase of heat that then ensues, and which is incompatible with its duration.

Again, honey was employed in ancient times, as still it is, as a useful application to relieve aphthous eruptions in the mouth and fauces; but then the relief obtained was attributed not immediately to the mean employed, but intermediately to an extraneous coincidence foreign to its nature, and only therewith fortuitously connected; i. e. the cure was ascribed by Soranus, who records a case in point, not to the honey, *as* honey, but to the accidental circumstance of *that* honey, which wrought the cure he mentions, having been procured from bees that had hived near Hippocrates' tomb.

Thus when men prescribed medicines, of the properties of which there was little known, for diseases, of the pathology of which they knew much less, it cannot be surprising that, although sometimes, *perchance,* they might assist recovery, more frequently they would do no good; and not uncommonly they would do much harm. Still, such was the perverseness of superstition, such the obtuseness of her votaries, that, whenever recovery ensued after the administration of any remedial means, were it either independent, or even in spite, of its effects, the cure was immediately attributed thereto; and when, as oftentimes occurred in cases of real disease, (although many slight or supposititious ailments would occasionally disappear during the exhibition,) it failed to cure or to relieve, some trifling variation in attendant circumstances, such as the mode or hour of administration or collection, or some such other trifling irregularity, not only foreign but impertinent to the question, was referred to as the source of failure: and hence arose many of those superstitious rites which figure so strangely in the medical records of antiquity. Thus, if, as we are told, the vervain cured the falling sickness in one individual, and in another failed; i. e. if *after* its administration one individual got better, and another worse, and if it was observed, or even fancied, that the latter had gathered the herb with his right hand, and the former with his left, this supposed ceremonial irregularity was esteemed a sufficient cause of failure; and hence arose the dogma that vervain should be gathered with the left hand only; but when, as could not but occur, of the left hand gatherers, some recovered and others died, further sources of disappointment were invented, and any thing was doubted rather than the potency of the plant *when charmed;* such as the time, the previous incantations, and other such like matters. But, in spite of all precautions, failures still ensued, and as fast as failures multiplied, so fast increased the ceremonials likewise, until at length we learn that the vervain was to be gathered with the left hand only, libations of honey being previously poured out, and after the plant had been encompassed with a circle: it was to be done likewise at the rising of the dog-star, and when neither the sun nor the moon shone. Again, the Selago was to be reverently approached with the feet bare, yet never to be touched with the naked hand. But, not to add instance to instance, for here the increase of examples is not required, the mistletoe, or all-health of the Druids, may be at once referred to, as a most remarkable and familiar illustration, and one, the particulars of which, without repetition, will be present to the memory of all.

When subsequently, as could not but occur, some refractory patients refused to take the nauseous doses which fraud and superstition had prescribed, and still, in spite of their presumption and irreverence, recovered, then the ceremonial observances of the friends or the attendants received the credit which had previously been given to the drug, and certain rites became esteemed as charms for the cure of persons sick, and for the preservation of those in health. Hence votive tablets and incantations sprang; in truth, a vast improvement in the art of physic; for, during these ritual observances, nature was allowed to effect a cure unimpeded by the interference of ignorant pretenders. The cure of wounds by sympathy forms of this a celebrated example; for thus the noxious dressings became applied to the weapon, instead of to the wound, which modest nature in the mean time healed; while incantations and sympathetic unguents gained the credit: to them, however, much praise was due, for the time they afforded to the *vis medicatrix* to effect a cure.

But were all the therapeutic agents, so famed in former times, utterly inefficient towards the recovery of health? Certainly not: far from it. But the principle of their administration was woefully misunderstood; and, consequently, the means themselves capriciously and often ineffectually applied. For who doubts the efficacy of hygeian springs, or the recovery of the sick who journey in quest of health to Hippocrates' tomb? Who doubts the history of strength restored to pious pilgrims, when abstinence and exercise (the sanative principles of the "*ball of basilisk*") were necessarily attendant on their visits to distant shrines. For one, I doubt not. I believe implicitly that many did not recover; that many were relieved; that many were restored to perfect health: just as I implicity believe a journey (call it, if you please, a pilgrimage,) to Cheltenham, to Harrowgate or Bath, to Madeira, the south of France or Italy, the change from a London to a country life, a necessity for exertion, more early hours, and often some slight abstinence in food, or a total change of diet, will even now, and in these degenerate days, do much towards checking the progress of disease, much towards the recovery of health. To be sure, the principles of the prescription are not similar, although both the agents and the patients are much the same. *Nomina* as well as *Tempora mutantur, sed nos* non *mutamur ab illis.*"

We smile at the recital of the superstitions and credulity of a former age, and we do well: though we little think that our smiles too often condemn ourselves: for how little do we yet know of the nature of the instruments we frequently employ for the cure of disease, and how very little of the nature of disease itself. I say not this invidiously, for much in both departments has been lately done; but this increase of light only the more strongly shows how very much more there remains for us to do. Still this is a subject rather of congratulation than despair; it is rather our incitement than disgrace.

Experimental study, supplanting mere speculative philosophy, has worked miracles on every side; and in no science has it wrought more wonders than in our own. Experiment is the key by which we have been already able to translate so many passages from the book of nature into our mother tongue, and by which we hope to be enabled to construe many more. But because much has been lately done, therewith shall we rest content?—forbid the unworthy thought; for contentment too often is allied to sloth, and sloth is the bane of science. Our predecessors have been our pioneers; they have cleared away from the entrance to the temple of Truth much of the accumulated rust of ages. We now no longer hear of the royal touch being efficacious in the cure of scrofula; although once, in this very town, a philosopher (who lived, as we might say, before his age,) was tried, found guilty, and severely punished, for doubting the efficacy of this repellent. We no longer hear of those disgusting tales of females crowding to the gallows' foot, to have unsightly tumors rubbed with an executed felon's hand; and their necks, by the officiating hangman, smeared with perspiration wrung from a fellow-creature in the agonies of death. No longer are our Dispensatories disgraced by the enumeration of "manus regalis" et "manus hominis mortui" as remedial means. Yes: our Dispensatories have been much purified of late, and medicines no longer are prescribed merely because they are nauseous; nor things now given to a man when sick which would disorder his system even in the most perfect health. General observations are, however, tedious: let them be changed for an example. Among the much valued vegetable medicines of the century before the last, was mouldiness, or mildew: not simply mould, not that which springs on decaying wood, or bread, or meat, or cheese, but mouldiness scraped from a human skull. This drug even stands in the catalogue of materia medica published by the London Royal College of Physicians A. D. 1618, as "usnea cranii humani," which shows how much it was esteemed; for the College have ever striven, as far as the prejudices of the age would let, to discard all useless articles, and to march, though with discretion, not hardihood, in the van of science. Again, the urine and the excrement of various animals were formerly much esteemed: and of each we find extensive lists recommended officially to notice. Much of the supposed efficacy of drugs seems once to have been attributed to the filthiness of the sources whence they were derived: thus, although carbonate and phosphate of lime are excellent absorbent earths, and exhibited with much benefit in many cases of cardialgia, diarrhœa, and other complaints, still a simple chalk mixture would have been formerly despised; while one of *album græcum* would have been swallowed with avidity. Now album græcum, it is all but needless to observe, was only an impure bone earth, not obtained from the laboratory of the chemist, but elaborated in the intestines of the dog. For the preparation of this precious drug, dogs were purposely all but starved, well-picked bones being their only food; and then, the gelatine of the bones being partly absorbed during the passage of this osseous matter through the alimentary canal, the earthy portions were evacuated in a half-blanched and semi-pulverulent condition: this excrement was then collected with a jealous care, and became the album græcum of the shops, highly prized as a discutient, and forming a favorite internal application to the throat in quinzies. I will not waste your valuable time in further disquisitions on this subject, although it is a point of curious interest to trace the progress of the art we study, and highly useful sometimes to unravel the absurd intricacies of those who loved to make medicine a greater mystery than it ever will inevitably be; for thus do we in our minds enhance the estimation of that unsophisticated and simple nomenclature which signalizes the age, and with which science now in general is blessed: and we shall ever value more this striving after perspicuity, even if it fail, when we contemplate the obscurity in which all subjects were at one time purposely involved; *names* being given to *things* apparently rather to conceal than to explain their nature, although sometimes, as in the *aqua omnium florum*, there was an oracular latent witticism which fails not to provoke a smile; for, says BAILEY, "*aqua omnium florum*" means (among chemists) the distilled water of cows' dung, when cows go to grass. But of this enough: one sample of such precious balms may well suffice.

An imperfect knowledge of the essential properties of medicines, especially of the vegetable materia medica, has always led, as still it does, and as long as it exists must ever lead to complicate our prescriptions, to cripple our resources, and to confuse our principles of practice. Formerly this was much more prevalent than it can be now; but, even in the present age, I doubt not that great and unneeded complexity remains, though as yet it may be hidden from our eyes. Each succeeding year long has tended to simplify and curtail our catalogues of drugs; and each succeeding year, it may be easily foretold, will tend to simplify and curtail them more. I could point out many instances, both ancient and modern, in which agents, similar in effect, if not identical in composition, appear many times under different denominations, their names being the points in which they differ most. How many mere varieties of carbonate and phosphate of lime do we even now admit, merely because they are derived from different sources, and how much more numerous were they in the age before the last, when all drugs were considered essentially distinct whenever the substances were distinct from which they were obtained. I have chosen this purely chemical illustration because chemistry has lately thrown so much light on medicine, and promises to shed much more, and its researches are far more complete in the constitution of inorganic nature. Indeed, we are at present unable to determine, in the vegetable department, how far many of our most costly drugs may be entirely dispensed with. How many mere varieties of expensive astringents, bitters, aromatics, &c. do we not now employ, when more than a reasonable doubt may be entertained as to whether, as in the case referred to, their truly efficient principles may not be extracted from cheaper materials and more abundant sources: of this we have already proved the practicability in several important cases. Thus, the vegetable alkali, our sub-carbonate of potash, was at one time possessed of numerous names, and appeared and reappeared over and over again in the Dispensatory; and yet, at each repetition, seems to have been considered a new and independent drug. Thus, we find it introduced under the style and titles of Sal Absinthii, or salt of wormwood, Centaurii minoris, Cichorii, Euphrasiæ, Fabarum, Fumariæ, Genistæ, Herbarum, Plantaginis, Plantarum, Querens, Tartari, and many others, as each vegetable was considered to afford a peculiar salt: while, in truth, none of them differ essentially from each other, the only variation being in their relative degrees of impurity; so that the terms Sal vegetabiles, or Sal plantarum vel herbarum, would conveniently include the whole. And yet, even now, or very lately, as I have been credibly informed, some persons will give a quadruple or quintuple price for Sal absinthii, an impure subcarbonate of potash, obtained from wormwood, to what they will for the same, but more pure and valuable drug, derived from common and less costly sources.

This is but a solitary example yet " ex uno disce omnes."

Shall I add a further illustration, *oxalic acid,* if procured alone from the plants whence sprang its name, (Oxalis autosella, Corniculata, &c.) would be a very expensive drug: even when at first, under the cognomen *Acidum sacchari,* it was formed by the destruction of sugar, it was, within my recollection, sold in this town at 3s. 6d. and 4s. per ounce; but now it may be bought at the manufacturing chemists for about half that sum per pound.

Probably a like fate awaits many of the proximate principles, in modern times discovered, and still considered to be distinct. Thus, colchicum is doubtless a useful medicine, though fashion has somewhat enhanced its fame, while Gratiola, the old Gratia Dei, and Veratrum album, or white hellebore, have completely fallen into disuse, if not into disrepute; and yet the active principle is in all the same, and might, if extracted from either, be indifferently used, and with equal advantage and effect. May not this indicate the propriety of extracting veratria from hedge hyssop, veratrum, where those plants abound, rather than from the expensive colchicum? These instances must likewise indicate the advantages likely to accrue from an intimate acquaintance with the proximate principles of vegetables, when we may find our active agents, not in one situation only, but recognize them in many, and seek them wherever they may be most abundantly present, or most easily be found.

I fear that an accumulation of the evidence of how much is wanted to be known on the points which this Society has proposed as the objects of its chief inquiry, might weary the attention of the meeting. I will, therefore, add but one example more,—the value of Peruvian bark; it is likewise known to every one that there are many species of cinchona, differing in their efficacy and worth. Of these, three are admitted into our London Pharmacopœia; viz. Cinchona lancifolia, or lance-leaved cinchona, affording the pale brown bark; C. oblongifolia, or oblong-leaved cinchona, yielding the red bark; and C. cordifolia, or heart-leaved cinchona, which gives the yellow bark. Now, of these three, it is well known that the lancifolia, or quilled bark, has in general been, by the profession, the most esteemed; still the oblongifolia, or red bark, has not been without its advocates; indeed, popularly, it was so highly prized that, in the markets, it would occasionally fetch threefold the price of brown, and six times as much as the yellow, or heart-leaved species, which was comparatively slighted both by the profession and the public. Perhaps, the scarcity of the red bark contributed something to its high estimation, as the relative abundance of the yellow not improbably increased its disfavor, just as at the present day no one will use, (indeed, who would condescend to use,) the indigenous simple, aromatic, and astringent bitters, Nenianthes, Teucrium, Salix, Acorus, and Bistort, which grow abundantly at Hampstead, Highgate, Battersea, and Paddington, when they can have Quassia, Catechu, Cinchona, and Colomba, by sending to Hindostan, Jamaica, Mozambique, or Peru?

And here (as in a parenthesis) I would observe, that our native medicinal herbs have of late been too much neglected; for certain it is that we compass half the globe to import a drug, the prototype of which not unfrequently solicits our hands at home. I, for one, can never think that all those are useless that we use not; that such countless myriads of beauteous herbs which spring profusely wild over all the deep green earth, spring oft in vain, because in vain they court man's notice and regard; I never can believe that Providence has armed the weeds of foreign lands with powers necessary for us, whilst ours are impotent to heal. I never can believe our herbs inert, whilst every plant in other climes may boast itself a physician's staff. I know that it is by a merciful dispensation that man has been condemned in the sweat of his brow to eat his bread; I feel that, where necessity compels not to exertions, indolence debases man almost to the level of a brute; and likewise, I confess that, where most is required for the body, there most fully are developed the energies of the mind; still I cannot but perceive that many of our native plants want but to grow upon the Andes or the Alps to be sought with avidity, and treated with respect.

It is therefore a matter of no mean importance to which, by a resolution of the council, the attention of the scientific world at large, of the members of this Society in general, and of my colleagues and myself in particular, is directed, by the determination to award the silver medal of the present year to the author of the best essay on the nature and properties of any indigenous plants the medicinal powers and properties of which have been hitherto unknown, or only imperfectly recorded. To me it appears that this will be sinking a shaft in a very rich mine of scientific discovery, of trüly philosophical research. I doubt not, that we shall find many of the remedies now sought from the tropics and the poles growing at our doors, and soliciting to be allowed to relieve our ills. It is an amiable idea, and one that experience goes far to verify, that wherever natural circumstances favor the production of disease, Nature, i. e. nature's God, hath beneficently conjoined the means of cure. May not the late experiments with Salicine be given as an apposite illustration? For, although we have so long been ploughing the Atlantic, and burdening the bosom of the deep, to bring home our harvests of Peruvian ague-cure, the ever valuable cinchona, *Salicine*, extracted from our native willows, so far as experiments as yet have gone, is proved to be equally efficient with the *Quinine* of Peruvian bark. Where do agues most commonly prevail? Where do we find remittent and intermittent fevers of the greatest frequency and most fatal severity? Where! but in wet, low lands; in marshy and in fenny districts. And where do willows love to dwell? Where! but in those very fens and marshes; as if to relieve the diseases inseparable therefrom. Hence I cannot but regard them as the living elaboratories of nature, thus planted by Providence to form Salicine for the use of man.

(To be continued.)

MIDWIFERY.

Half-yearly Report of Cases in Midwifery, which have occurred in the Northern District of the London and Southwark Midwifery Institution. By C. Waller, m.d., Consulting Accoucheur to the above Institution, and Lecturer on Midwifery at 93, Bartholomew close, near St. Bartholomew's Hospital.

1832.	Number of Women delivered.	Sex of Children.		Born Alive.	Stillborn.	Presentation.
		Males.	Females.			
July	46*	20	27	41	6	38 Natural 4 Breech 1 Arm & Funis 4 Face to Pubis
August....	37	16	21	34	3	36 Natural 1 Breech
September	37	20	17	34	3	36 Natural 1 Breech
October...	45	27	18	43	2	42 Natural 2 Face 1 Placenta
November	52	30	22	50	2	51 Natural 1 Breech
December	44	24	20	39	5	41 Natural 1 Funis & head 2 Face to Pubis
Total ...	261	137	125	241	21	* One case of twins.

Several of the above, reported as Stillborn, were Premature Births.

Our institution has been remarkably free from disease since last report: there has not only been no death, but hardly a case of danger.

In one case, in which the head descended with the occiput forwards, it was found necessary to use the forceps; but the others required no manual interference. The more I see of these malpositions of the head, the more satisfied I am that, as a general rule, no interference on the part of the accoucheur is required, and, therefore, that the instructions for the rectification of such presentations, to be met with in some authors, are worse than useless. It is true instruments may sometimes be required, yet their necessity occurs but rarely, and the injury likely to arise from the occasional use of the forceps is much less than that which would follow the invariable manual interference previously alluded to.

There was in one female a very tight adhesion of the placenta: some difficulty was experienced in its separation, the uterus having contracted closely around it. This circumstance, however, prevented hemorrhage, and thereby lessened the danger to the patient.

A very interesting case of convulsions occurred in a female in labour with her first child. She was perfectly senseless for many hours before the birth of the child, which presented the breech, and was born dead. The plan of treatment was bleeding from the arm before delivery, and the application of leeches, the administration of brisk purgatives, together with the constant use of an evaporating lotion afterwards: the result was perfectly successful.

There was great hemorrhage in the case of placenta presentation, but it had nearly subsided before I arrived at the house. The breech of the child presented, and my pupil, Mr. Newth, whose patient it was, had succeeded in bringing down the feet, whilst the messenger was despatched for me; so that I had merely to look on whilst he completed the delivery. The case was conducted in a manner highly creditable to him. The patient, having no bedstead, was obliged to lie on the floor, which rendered the operation more difficult than it would otherwise have been.

In the arm presentation, the liquor amnii came away at the beginning of the labour; but the uterus remaining very inactive, no great difficulty was experienced, although turning was not effected until forty-eight hours had elapsed.

Bartholomew Close; January 1833.

ASCITES.

Cases of Ascites, cured by Compression. By Dr. Fenoglio, Surgeon to the King of Sardinia, and to the Celtic Hospital. *(Gaz. Med.)*

It appears, from the testimony of MM. Bricheteau and Husson, that a radical cure may be effected, in certain cases of ascites, by means of compression, without danger and with considerable certainty. M. Bricheteau, it is true, found that, in some instances, the patient could not bear this mode of treatment, in consequence of the great difficulty of breathing to which it gave rise: in some cases, also, abdominal pains were caused, which led to a suspicion that peritoneal inflammation existed together with the dropsical effusion: but such cases were exceptions to the general result.

M. Fenoglio compares ascites to hydrocele, and believes that, in most cases, in order to obtain a radical cure, a certain degree of inflammation of the serous membrane which is affected must be caused, for the purpose of leading to salutary adhesions, or that the artificial inflammation may effect a radical cure in some other manner, which is not yet understood. The two following cases are interesting in a double point of view, inasmuch as they confirm the efficacy of this simple, and too little employed, mode of treatment in a disease which frequently rebels against the best practice;

and, on the other hand, they show the symptoms which may result from the employment of compression, and the means by which they may be relieved. M. Fenoglio agrees with those who have previously written on the subject, that compression should not be tried in patients who are either much debilitated, or who are labouring under some structural disease of the viscera, which acts as a permanent cause in the production of the dropsical effusion. In such instances, the effect of compression would be very doubtful. Compression succeeds in those cases of dropsy to which the term "essential" was formerly applied, and which are supposed to arise from defective absorption or increased exhalation.

CASE I. *Ascites after premature Labour; Failure of internal Remedies. Compression; Peritonitis; Cure.*

A woman, of very nervous temperament, and of lively disposition, became pregnant, for the first time, at the age of twenty-two, and after great mental suffering, occasioned by discord in her family, she fell into labour at about the seventh month of utero-gestation. After her labour she became dropsical, and various remedies were tried in vain. When she applied to Dr. F., for the purpose of being tapped, she was very pale, but not much weakened or emaciated; she could also move about with facility, considering the enormous size of her belly; pulse natural; her respiration was only impeded at intervals, and she complained occasionally of a painful sensation about the diaphragm; the abdominal parietes were tense and thin. She had at this time been dropsical twelve months. Every care was taken to ascertain that there was no complication of any other disease, and that the patient was not again pregnant.

After the administration of two enemas, followed by a few days' rest, thirty-six pounds of a thick turbid fluid were drawn off by tapping. She willingly consented to any treatment that was likely to effect a radical cure, and, as her case appeared very favorable for a trial of compression, in consequence of its being one of simple dropsy, unattended by organic disease, it was tried in the following manner: The belly was surrounded by large compresses, which were kept on by a bandage applied so tight that the patient could not breathe with quite her usual freedom.

The second day from this "*tentative hasardeuse,*" there was a more abundant flow of urine; but the peritoneum and viscera appeared to suffer from the compression. At the end of the third day, so much pain was produced that a high fever followed, with shiverings, nausea, and vomiting. The desired inflammation was now clearly established; but, from an apprehension that this irritation, which had been designedly produced, might lead to disastrous consequences, if it were not confined within proper bounds, the compression was removed, emollient cataplasms were applied, and the patient was bled largely three times in twenty-four hours.

By this energetic treatment, the symptoms in a great measure subsided, and the patient slept for a short time. Nitre and digitalis were subsequently given, with the double intention of completely removing any disposition to inflammation that might still remain, and of causing a free flow of urine.

At the end of six days, there was no appearance of inflammation; the fever had subsided, and the patient was rapidly advancing to a state of convalescence. No relapse happened: the belly did not swell, and the urine was discharged in a natural quantity. The patient was afterwards troubled with severe palpitation of the heart, which yielded, after some time, to the daily use of valerian and assafœtida. In a month after the operation, she returned home perfectly cured. Four years have elapsed, and she remains in good health.

Case II. *Ascites without Organic Disease. Paracentesis performed five times; Compression; Symptoms of Irritation; Cure.*

A man cook of Count N., who had been much addicted to drinking and other kinds of debauchery, became dropsical at the age of thirty-seven. His habitual intemperance, no doubt, produced the disease. He had still a robust appearance. He had been tapped four times, and now applied to Dr. F. to have the operation again performed. At this time his countenance was pale; belly enormously distended; pulse regular, and natural in strength. He was first purged by enemas, and forty pounds of reddish-looking serum, without any disagreeable smell, were afterwards removed by tapping. The belly was carefully examined, but no visceral disease could be detected to contraindicate the employment of compression, the effect of which it was determined to try.

Compresses and bandages were applied, as in the previous case, and they were kept on until the appearance of inflammatory symptoms; but bleeding was not required in this case: it was merely necessary to remove the compression, and to apply emollient embrocations. A natural flow of urine was now established; the patient was speedily relieved of the dropsy; and three years have elapsed without any symptoms of relapse having occurred.

ALBINOS.

Queries respecting Albinos. By E. G. Ballard, Esq. Islington.

There is, perhaps, no phenomenon more singular in physiology than that of Albinos; the following account of which, and the queries suggested by it, may possibly lead to some investigation on this curious and interesting subject.

In Saussure's "Voyages dans les Alpes," is an account of two boys at Chamouni, who were called Albinos. The skin was perfectly white, like milk, as well as their hair. In the eyes, both the iris and pupil were red. This he accounts for by stating, that probably the interior membranes of the eye were destitute of the uvea and of that black mucus which should line them.

The Albinos of Africa differ in nothing from these, but in their having the features of blacks.

M. BLUMENBACH agrees with the opinion of the cause of the redness of the eyes, and says that the different colours of the eyes, as well as the strength of them, as people with light eyes cannot bear a strong light, suits very well with northern nations during their long twilight; while, on the contrary, the darkness of the eyes of blacks enables them to support the splendor of the sun's beams in the torrid zone. As to the connexion of the colour of the eyes and the whiteness of the skin and hair, he refers it to similarity of structure. He asserts, that this black mucus is formed only in the delicate cellular texture, which has numerous blood-vessels contiguous to it, but contains no fat, like the inside of the eye, the skin of negroes, the spotted palate of domestic animals, &c.; and, lastly, he says, the colour of the hair generally corresponds with that of the iris.

M. BUZZI, surgeon to the hospital at Milan, in a very interesting memoir, demonstrates, by dissection, what Blumenbach had only conjectured. A peasant, of about thirty years of age, died at the hospital of Milan: his body, being exposed to view, was exceedingly remarkable by the uncommon whiteness of the skin, hair, beard, &c. M. B., who had long wished to dissect such a subject, immediately seized upon this: he found the iris of the eyes completely white, and the pupil of a rose colour. On dissecting them, with the greatest possible care, they were found entirely destitute of the black membrane which anatomists call the uvea. It was not to be found either behind the iris or under the retina. Within the eye there was only found the choroid coat, extremely thin, and tinged of a pale red colour, by vessels filled with discoloured blood. What was most extraordinary, the skin, when detached from different parts of the body, seemed also divested of the rete mucosum: maceration did not discover the least vestige of it, not even in the wrinkles of the abdomen, where it is most abundant and most visible.

M. B. likewise accounts for the whiteness of the skin and hair, by the absence of the rete mucosum, which, he says, gives the colour to the cuticle, and to the hairs which are scattered over it. In support of this, he adduces a well-known fact, that, if the skin of the blackest horse be by chance destroyed in any part of the body, the hair that afterwards grows there is always white, as is the skin, because the rete mucosum, which gave both their colour, is never regenerated in the skin.

These arguments, which are extracted from the "Encyclopædia Londinensis," seem conclusive, and are necessary to the introduction of the following queries, which suggest themselves on the subject.

1. As the rete mucosum is evidently as much a secretion from the mass of blood as any of the other secretions, is it not, like many of them, lessened in quantity by disease? and is not this one cause of the paleness attendant on many acute and constitutional diseases, as inflammation of the lungs, consumption, &c.?

2. May not the same deficiency of this secretion occasion the hair in very old people to turn gray;* considering that the constant renewal of the human frame is going on, and that the hair daily, though perhaps imperceptibly decays, or is reduced by cutting; and that in itself being tubular, may, through the orifice, when first made, discharge, in some degree, the colouring matter it has imbibed through the pores of its roots, which no longer affording a supply of the rete mucosum, the oxygen in the atmosphere may operate upon the exterior membrane which constitutes the hair, and reduce it to whiteness?

But this involves another question, viz. whether the oxygen in the atmosphere operates upon the colouring matter of the human frame, as it does on that of vegetables?

3. How is it, if, as the above statement suggests, the black membrane in the eye, (or, as it is called, the uvea,) be of the same nature as the rete mucosum, that a white dog, whose skin under the hair is of the same colour nearly as that of the human body, and, by the whiteness of the hair and fairness of the skin, may be supposed to want the rete mucosum, that the eyes of such a dog are not red but hazle, when a white rabbit, under the same circumstances, shall have red eyes?

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* On examining a gray hair from my own head, I found the root devoid of colouring matter, and the tube perfectly white, transparent, and slightly corrugated, as if dead.

CASE OF EPILEPTIC ASPHYXIA.

To the Editors of the London Medical and Physical Journal.

GENTLEMEN: Should the following case appear to you of sufficient interest to merit publication, be so obliging as to give it a place in your valuable periodical.

Yours, sincerely,
E. W. DUFFIN.

3, *Foley place; 16th January,* 1833.

ON the evening of the 19th October last, I was requested to visit Mr. R., ætat. seventy-three years, of a sanguine temperament, slender and delicate form, and, for his age, a man of more than ordinary acuteness of intellect. I was informed that for the last four years he had been liable to fits, which recurred at irregular intervals, as often as three, four, or five times in the course of the year; that he had that morning, about eleven o'clock, been seized in the street, carried home, and cupped freely at the back of the neck; and that, since that time, he had experienced several more attacks, varying in duration from five to fifteen minutes each. On my entering his chamber, he was seized with a more than ordinarily severe paroxysm, which presented the following phenomena: At the moment of attack, he uttered a faint exclamation; his face flushed a little; his eyes became fixed; his breathing laborious, but not stertorous; and his whole frame slightly convulsed, more especially the muscles of the face and upper extremities. His pulse beat only twenty-eight in the minute, was free, soft, and easily compressed. In this condition he continued for about five minutes, his pulse becoming gradually slower and more feeble, until it beat only at intervals of twelve seconds, and then ceased altogether, at the heart as well as at the wrist simultaneously. His respiration, in like manner, became gradually less laborious, and was repeated at very long intervals, till it finally ceased. The colour that had remained in his cheeks now completely fled, the lighter parts of the skin assumed a leaden hue, and his lips a purple tint; the whole muscular system was relaxed, the lower jaw dropped, (for he was sitting supported in an easy chair,) the extremities became livid and cold, and I concluded he was dead.

As I was informed by his friends that he had repeatedly during the day, and on former occasions, exhibited similar phenomena and revived, I kept my finger applied to his pulse, and my hand over his heart, and requested an attendant to hold my watch before me, that I might ascertain how long animation would remain in a state of suspension. At the expiration of four minutes and a half, a single feeble pulsation was again felt, both at the heart and wrist, and the colour of his face began to return. In the space of six seconds, another pulsation was felt, and again after a lapse of four seconds: this third beat was much stronger and more decided in every respect than the two preceding ones. He then made an effort to breathe; and gradually from this time, in the space of about eight minutes, was perfectly restored, and his intellect became as clear as if nothing had happened to him.

For several days afterwards he was attacked, as often as ten times within the twenty-four hours, with fits of asphyxia similar to that I have just described, though only on one occasion of so long duration; and experienced in all, before recovery, forty-six paroxyms.

It is worthy of remark, that his pulse generally averaged twenty-eight beats in a minute during the intervals, and that afterwards, when in perfect health, it never exceeded thirty-three. For a few seconds before each fit, he generally complained of fulness and constriction of the head, and observed that, at the moment of seizure, a sudden determination of blood to the head, accompanied by a rushing noise, gave him acute pain, and was the cause of the exclamation he uttered at that time. Upon one occasion during his illness, he was very much distressed with spasm of the diaphragm, intercostal, and sterno-costalis muscles, which created difficulty of breathing to so great an extent that I feared he would be suffocated.

Neither at this time, however, nor at any other, could I, by the most careful examination of his chest, detect any symptoms of disease of the heart: it always beat with the utmost regularity and tranquillity, and, if its slowness be excepted, naturally in every respect: but of this peculiarity he was aware, and informed me that it was natural to him, and had always been observed by every medical man that had attended him during his life. Nor did there exist any symptoms of organic disease of the brain: on the contrary, his mind, during the intervals and afterwards, was always clear, his memory good, and his judgment correct; and, unless for a moment or two before the accession of each fit, he never suffered headach nor other cerebral inconvenience.

From the history he gave me of certain dyspeptic symptoms, that had always apparently been the cause of his former attacks, combined with the existing foul and furred state of his tongue, loaded and obstinate bowels, and the insufferably offensive nature of the first discharges that were procured from them, I concluded that his attacks depended upon a surcharged and disordered state of the primæ viæ. Hence, as his pulse did not warrant further depletion, the treatment consisted of the administration of stimulating purgative clysters, repeated doses of calomel and compound extract of colocynth, and black draught; cold applications to the head, previously shaven; blisters to the nape of the neck; and, during the paroxysms, active friction over the whole body, and sinapisms to the feet. So soon as his tongue became clean, and the alvine evacuations had assumed a natural character, the fits ceased, and in ten days' time he was as well as he had ever been for years.

On the 20th of December following, he was again seized with another series of fits, for which, as his friends had seen him apparently so much worse and recover, they did not at first deem it necessary to send for medical aid, or pursue any active means to effect his restoration. In the course of the evening, however, observing him paralysed, I was requested to visit him; but it was too late; he died in a few hours afterwards.

It is to be regretted that permission could not be obtained to examine the body after death.

FACTORY LABOUR.

On Factory Labour. By John Malyn, Esq., Surgeon. (Read before the Westminster Medical Society.)

An inquiry into the influence which labour exerts on the animal economy, when that labour is pursued, during the process of maturation, in a heated and polluted atmosphere, in an erect and slightly varying position, and with but brief remissions for refreshment and rest, would possess considerable attraction, even as a speculative question, totally unconnected with the actual condition of beings who had been subjected to the implied experiment. It inspires, however, a deeper interest when its object is not only to demonstrate that the moral as well as physical degradation of such as are so exposed, is the natural and unavoidable consequence of their employment; but also, by fairly and dispassionately stating the grounds on which that conviction is founded, to offer such evidence of the iniquity of the system as to secure, in the design of its improvement, the co-operation even of those persons who, regarding it as a mere commercial question, have hitherto been opposed to the benevolent attempts which have been made to mitigate the abiding misery of the poor.

Great as is the evil, and widely and severely as it has been extended, even to the alteration of character, the engendering of disease, and the abridgment of the natural period of life, it is yet of comparatively recent origin.

Before the ingenuity of the mechanic had called into existence those potential instruments of manufacture which bring forth wealth in unbounded profusion, and cast into shade the former humble and unassisted operations of man, the different fabrics of the country were produced in the cottage of the artisan. Surrounded by those in whom he took a direct interest, he laboured in his vocation with advantage to himself and family: his daughters became qualified for the discharge of domestic duties; his sons assisted him in his work, to the extent of their infantile powers; and the minds of both were preserved from contamination, and imbued with those hallowed sentiments which formed the seductive character, of which we have all read, but few seen specimens, in which the chief attractions are, singleness of heart and sincerity of purpose; cleanliness and health combined; devotion from affection, not fear for their superiors; attachment to their kind, and a modest pursuance of that moral line of rectitude from which no well-regulated mind would ever have desired to see them deviate. Then it was that infancy was passed in innocent recreation, until the system was so far developed as to justify the appropriation of its powers, not as a matter of gain, but to qualify it for its part in life. The circumstances by which the child was surrounded were salutary; its introduction to labour was gradual; its powers of endurance were never exhausted, and it therefore flourished and attained strength, like a plant in appropriate soil and genial atmosphere. Acknowledging the responsibility of a parent, a workman of those days would have spurned the idea of consuming, in its youth, the manhood of his child, or of coining into money its health, its happiness, its life.

But their condition changed. Machinery was introduced, and it brought forth abundantly. The application of steam was effected, and its mighty energies multiplied the product. The cottage was swept away, and the social hearth made desolate. Men were congregated together in large establishments, to aid the operation of the engine, of which they now became the mere instruments. It was soon discovered that, as direct strength was not required, women might be serviceable; and, accordingly, for this employment they abandoned their household labours. Untiring in the pursuit of wealth, the employer failed not to observe that a child, nay, an infant, (and that without distinction of sex,) might supply the place of an adult; and the fields and the playgrounds ceased to resound with the noisy hilarity of youth. But the evil ended not here. Individuals, whose thirst for gold was insatiable, gradually extended the period of labour. Exaction begat exaction to such an extent, that not only did the term of exertion frightfully exceed that allotted for rest, but the intervals for refreshment were at first curtailed, and afterwards, in some instances, abrogated altogether, food being taken as opportunity might serve, while they were executing their duties. It mattered not that this abuse had a local origin: having been commenced by a few, others were constrained to follow in their wake, by the coercive influence of competition. Hence have the habits and condition of these unfortunate people undergone a revolution which it is deplorable to contemplate. Their habitations are neglected and unhealthy; their food is poor and innutritious; their persons are dirty and slightly clad; their language and conduct are of the most repulsive character; females are no longer qualified for the discharge of the duties of a wife or a mother. domestic life having lost its charms, husbands seek other society and other pleasures, by indulgence in which their minds are brutalized; the children of such parents rise hours before daylight from their wretched pallet, to encounter, with scarcely any clothing, and without any food, the frost, the snow, the rain, or the bleak winds of a winter's morning. The action and reaction of these conditions aggravate each other, and produce a state of debasement that we cannot witness without concurring in the fear of the late Sir R. Peel, "that the great effort of British ingenuity, instead of being a blessing, would prove its bitterest curse."

Some reformation was effected in the cotton factories by this gentleman, who endeavoured, and, to a certain extent successfully, to check the premature employment of children. He obtained for their protection an Act of Parliament, by the provisions of which, children under nine years of age were deemed inadmissible, and the period of labour was fixed at twelve complete hours out of the twenty-four, independent of the time allotted for meals. The Act, however, did not extend to other descriptions of factories. In them is exhibited a melancholy specimen of the atrocity which cupidity will justify, nay, defend; and they show how completely man may forget that his less fortunate fellow-creatures partake of the same nature and are formed by the same hand as himself. Thus, for instance, it was stated in the house of Commons, by that anxious friend and powerful advocate of oppressed infancy, Mr. Sadler, that, in Wales, "the children work twenty-four hours every other day, out of which they are allowed three hours only for meals, &c.;" that, "when trade is particularly brisk, the elder children work from six in the morning to seven in the evening, two hours being allowed for meals, &c., and every other night they work all nighti:"—that, at Bradford,

> "Children of these years (thirteen) are obliged to be at the factories, winter and summer, by six in the morning, and to remain there till seven in the evening, with but one brief interval of thirty minutes, every day except Saturday, ceasing work on that day, in some factories, at half-past five, in others at six or seven P.M. Not unfrequently this labour is extended till eight or nine at night, fifteen hours, having but the same interval for meals, rest, or recreation: nay, such is the steady growth of this overworking system, that children have been confined in the factory from six in the morning till eight at night, fourteen hours, continuously, without any time being allowed for meals, rest, or recreation; the meals to be taken while attending the machines; and this the practice of years."

That, in a mill at Leeds, the following was the routine of employment:

> "On Monday morning, work commenced at six o'clock: at nine, half an hour for breakfast; from half-past nine till twelve, work. Dinner, one hour; from one till half-past four, work. Afternoon meal, half an hour; from five till eight, work: rest for half an hour. From half-past eight till twelve (midnight), work; an hour's rest. From one in the morning till five, work: half an hour's rest. From half-past five till nine, work: breakfast. From half-past nine till twelve, work: dinner; from one till half-past four, work. Rest half an hour; and work again from five till nine o'clock on Tuesday evening, when the labour terminated, and the gang of adult and infant slaves was dismissed for the night, after having toiled thirty-nine hours, with brief intervals (amounting to only six hours in the whole) for refreshment, but none for sleep. On Wednesday and Thursday, day work only. From Friday morning till Saturday night, the same prolonged labour repeated, with intermissions, as on Monday, Monday night, and Tuesday; except that the labour of the last day closed at five."

With such extreme cases I shall not interfere. The facts themselves appeal forcibly to the heart. No one can fail to recognize their deadly tendency; and none, possessed of feeling, will hesitate to reprobate them.

In advancing the proposition, that "the Factory System is opposed to the healthy development of the human body, however favorable may be its external relations," I state a conclusion to which I have been led, by an observation of the persons who have been employed in manufactories, in which the legislature has already interposed; and which, I have reason to believe, are conducted with as much propriety and humanity as the present system will admit.

In these establishments, the temperature is unavoidably high, although it is not the same throughout the whole of them; the variation being caused by the different degrees of fineness of the material to be produced. Thus, while the thermometer stands in one mill at fifty-five, in a second it will be at seventy, in a third at sixty-two, and, in a fourth at eighty-five.

But, whatever may be the degree, it is necessary that it should be uniform, since the object of the manufacturer would be defeated by a current of air passing through the rooms. Hence is the atmosphere quiescent, experiencing none of those undulations, so grateful in an equally high but natural temperature. In the winter months, labour is pursued in the evening by artificial light, whereby the heat is much augmented, as well as the nature of the atmosphere changed. It is of some importance to remember this fact, as this maximum of temperature exists prior to the exposure of the work-people to the external night air.

The medium they respire is considerably affected by the constant extrication of dust and fine particles of cotton, by which it becomes charged with foreign matter. The oil of the machinery being decomposed by the heat, and the metal wheels, in this unceasing revolution on each other, extricating a powerful and oppressive noisomeness, the purity of the air is still further impaired. It suffers yet more pollution from so many persons being assembled together, who, in the respiratory process, abstract its vital principle; and the same principle is also consumed in supporting artificial light. In both instances a deleterious product is formed, which cannot be sufficiently supplied by fresh air without diminishing the temperature or injuring the work.

There is but little actual labour, and it has, therefore, been termed a light and easy occupation, as the child has scarcely any thing to do but to remain nearly stationary on his legs, and to occupy himself in a constant succession of the same acts.

The term of labour (fourteen hours) is interrupted by the morning, mid-day, and evening meals; one hour being allowed for dinner, and half an hour for each of the other two meals. It is a common practice with many children to bring their food to the mill. This, being put aside, becomes defiled by the deposition of the dust and flue; and, on this account, as well as from languor, the child often nauseates it, and either rejects it entirely, or swallows it without mastication.

A day thus spent is followed by passing into a cold, humid atmosphere, from one which is as hot as, and far more impure, than that of the tropics.

Such are the circumstances by which they are surrounded; and it is on these circumstances that we are to reason and determine their probable influence.

A stranger, whose eye had not become familiarised to the sight, would at once be struck with the inferiority and with the general aspect of debility of these operatives. Old age is unknown to them but by the anticipation of its attributes; for their services are valueless beyond forty or fifty. Instead of the hue of health, there is a sickly sallowness, languor in the place of vigorous elasticity, and weak and flabby muscles supply that tonic development produced by employment under favorable circumstances. In complexion, in size, in stature, they stand forth a race, blighted, not so much from original defect in the germ, as from the inappropriateness of the soil in which it has been reared. The diseases which prevail among them are, for the most part, diseases of debility. Acute affections are of but rare occurrence among those individuals who have, for some time, been subjected to the influence of these agents. Scrofula, in all its gradations, from its mildest to its worst form, attacking the joints, the glands, the skin, the eyes, and the viscera, is so widely spread that the disease seems here to have found its peculiar habitat. Among those who entered on the employment at an early period, and have survived the perils of youth, there are numerous cases of deformities. Many exhibit a flatness of foot which impedes progression; others, curvature of the long bones in the different directions of their length, or lateral distortion at the ankle and knee joints. It has, further, been remarked, by those engaged in that department of practice, that women who have passed their childhood in these places very frequently require instrumental assistance in parturition. In the domain of the physician, rheumatism, chronic affections of the liver, the innumerable forms of dyspepsia, local and general effusions, bronchial disease, and phthisis are abundantly found.

In an examination, instituted some years since, for the information of parliament, of the persons employed in a number of mills, the physician and surgeon reported that out of the number *then actually at work* not one fourth of them was free from disease. Out of 266 who were working in one mill, they found that sixty-three laboured under a cough, and that seventy-five were delicate. There were fourteen cases of distortion, eight were stunted, and there were eight cases of scrofula. Besides these, there were others with enlarged joints, difficulty of breathing, headach, rheumatism and pain in the legs. And these were found, not in an hospital, as at first sight might be imagined, but in a factory, where the people were following their daily occupation.

Dark as is this picture, I should not be surprised if, without departing from truth, it might have been more highly coloured. Such examinations are very fallacious: they present the most favorable side of the question. To render them any thing near perfect, it should be known how many have been employed within a given number of years; how many have died; and what is the present condition of those who have ceased from labour. The most correct evidence which we can obtain on this point is from authentic returns of the mortality of the agricultural and manufacturing districts. From a return made to the House of Commons in July last, we learn that there die, under twenty years, in Rutland, 37½, and in the metropolis, 46 per cent.; while, in the manufacturing districts, it ranges between 57 and 62 per cent.; demonstrating that, from some cause or other, there is here an immoderate consumption of human life.

These are the effects which, without any reasoning on the subject, must lead us to infer the deleterious influence of factory employment. Why should the grave absorb the young, and the infirmity of age replace the strength of manhood? Why should the natural term of life be abridged, and the efficiency of the subject circumscribed? Why should disease be here extensive in its progress, and odious in its character? To him who has possessed himself of an accurate knowledge of the structure and functions of the human body, of the laws by which they are regulated, of the dependence and reciprocal influence they have on each other, and of the effect of external agents upon them, the answer cannot be difficult.

The alleged causes have already been stated, and we advance, therefore, to the consideration of the mode in which they act.

Among the foremost of these causes is the high temperature, which, by prejudicing the digestion, and favoring the establishment of local congestion when cold is applied, produces many forms of disease. The cutaneous circulation is stimulated by the heat, so much so as to produce perspiration; and in this state of excitement they are thrice, daily, exposed to the agency of cold air. The disturbance of the circulation consequent on this exposure may be, and often is, attended with immediate and apparent injury; but it is no less certain that the powers of nature will repeatedly restore the balance. Yet this cannot occur often with impunity; for, however trifling and imperceptible may be its effects in each instance, they silently yet surely lay the foundation of severe and enduring disease. Among the many chronic affections which thus originate, we may trace to this cause that derangement of the liver which, to a greater or less extent, is universally obvious. It has been stated that these people are characterised by a sallowness of complexion, and it is exactly what might have been anticipated from the continuance of the biliary principle in the blood, by reason of the liver being, from its torpidity, (the result of these repeated collapses,) unequal to its extrication. A somewhat similar state of skin is observed in those who have long resided in hot climates; and it is to this cause that the condition is attributed by Dr. JAMES JOHNSON, in his luminous exposition of the sympathy which exists between the capillaries of the skin and the hepatic extremities of the portal vessels. The secretion of bile being imperfect, the chyme in the duodenum is deprived of a necessary agent in chylification: the product is therefore vitiated, the nutrifying portion being inappropriate to the exigencies of the system; while the fæcal remains are, from not possessing that stimulating quality which healthy bile communicates, imperfectly evolved, and, by their detention, prove a great source of intestinal irritation. It interferes with the digestion still further. An hour for dinner is sufficient for the ordinary circumstances of domestic life: it affords time for that brief repose which is necessary to the chymification of the food. The period occupied in passing to and returning from their homes reduces that interval, and originates the baneful practice of swallowing their meals without adequate trituration. I need not remark how pernicious this custom is in itself; but when, in addition, we reflect that they resume their labour with stomachs recently and improperly loaded, another important means by which the heat acts prejudicially is at once apparent. That admirable law, by which the blood is prevented flowing from the viscera through the liver, when that fluid recedes from the surface, is not only a provision against oppression of the heart in disturbed circulation, but is intended by nature to assist the action of the stomach in its early operations, as is evident by the chilliness which as invariably succeeds a full meal as it does other cases of visceral congestion. Here, however, nature is thwarted. Heat and labour conjoined determine the blood to the cutaneous vessels, by which the hepatic collapse is consequently removed. Thus, its distention about the stomach is prevented, and that organ deprived of a powerful aid assigned to it by nature. We, therefore, find matter, imperfectly masticated, subjected to the action of a stomach of which the energy is diminished, to be converted into chyme; this chyme passing into the duodenum, and failing there to receive those healthy fluids which are essential to its conversion into chyle. As the condition of the body is according to the degree of perfection of the matter by which it is sustained, we cannot be surprised that these poor creatures are of depraved and imperfectly developed structure, or that they exhibit such numerous instances of diseases of debility.

That bronchial and pulmonic affections are prominent in the deadly list, is a natural consequence of the vicissitudes of heat, and cold, and moisture, which they have to endure; but they may be increased in number and character, by the irritation of the loaded and otherwise impure atmosphere they have to respire.

We proceed now to the important consideration of its effects on early life; a branch of the question which I commend to your especial attention, as on it you may be required, before long, to pronounce an opinion.

That early and indiscriminate employment; that the child of ten should work to the same degree as a boy of fifteen, and that the latter should be employed the same number of hours as a man, is an impolitic, cruel, and atrocious practice: that it is contrary to every principle of science, and that it is an outrage on the laws of nature, must, in my opinion, be confessed by every one who is not blinded by interest or deficient of understanding.

The nature of a child differs widely from that of an adult: it appears to revolve in a more limited orbit, and, from this limitation, to be subject to more brief but rapid and quickly recurring sensations, owing to the excitability which obtains in youth being soon exhausted, and requiring long periods of repose for its reproduction. The demand for sleep and varied occupation, whether of mind or body, is great and frequent. There is a physiological excitement of all the functions (great in proportion to the youth of the subject,) which renders them peculiarly sensitive to external impressions: this excitement is manifested by a quick transition from one thing to another, either in speaking, working, or playing; by a rapid pulse, quick respiration, profuse perspiration, and copious secretion of urine. And is it in a state like this, one so predisposed to disease, that we would consign a child to those influences under which the matured frame must eventually succumb? Further, dependent on this excitement (by which is caused a great expenditure of power and matter, from the activity of interstitial absorption,) there is the necessity for a frequent exhibition of food, not more to supply that loss than to provide for, and indeed to effect, the increase of the body. But it has already been seen that the regulations of factories will not admit this, and the development of the frame is thereby retarded, as well as the constitution weakened by the privation. Granting that it is sufficiently often administered, its assimilation cannot be effected without good air and judicious exercise; and it has been shown that, even in the adult, in whom the functions are more steady and equable, this essential process cannot be accomplished.

To qualify a being for endurance in the active period of life, it is requisite that he acquire tone and energy, which can only be obtained by a varied action of the muscles during childhood, in a healthy atmosphere, and by at all times stopping short of fatigue. This vigour depends on the degree to which the blood is arterialized. Thus, we find that birds, whose structure is extensively permeated by air, possess a muscular force totally at variance with their size, enabling them to defy the height of mountains and the expanse of seas. The inactivity and unwholesomeness of a factory life are directly opposed to the attainment of this physical excellence, the real wealth of the labourer, and have a direct tendency to produce debility. The blood in the extremities, being deprived of the propulsive aid of the muscular system, lingers in its vessels, instead of being returned with regularity to the heart, producing, besides its general effects, local loss of tone, which, in after life, will be shown by œdematous legs, indolent ulcers, and varicose veins. The want of this tone in the muscles disqualifies them to preserve the different parts of the body, the one upon the other, for any length of time. Under the most salutary treatment, it would not be possible for youth to preserve the erect posture, especially if stationary, more than a short time, without severe suffering: it may not be pain, but it is a weariness, agonizing beyond expression, which attends muscular action when carried beyond its limits; it deadens all the energies, and weakens all the functions. Can any one reflect on the weight of the head and trunk, the number and position of the joints, and the consequently great muscular force which must be employed to preserve all these parts erect, and not shudder at the idea of being condemned to stand, like these youths, during twelve out of the twenty-four hours? The deformities which have been mentioned are readily explained, and the cause is so evident that it is almost needless to dwell on it. We well know how incomplete are the bones of the young, and that the deposition of the earthy matter, which constitutes their firmness, is not completed until a considerable time after the age of puberty. All are acquainted with the flexibility of these organs while the animal matter predominates, and it is probable that most have witnessed cases in which the application of force has bent the long bones into the form of a bow, without their being broken. At the period of life of which we are speaking, the bones are quite incompetent to the support of the superincumbent weight; by which we learn that nature (who has provided for every being, according to its condition, adequate instruments wherewith to fulfil its duty,) never designed that these bones should be submitted to such a task. Being, however, so submitted, they, from their pliability, yield, and a curvature, in one or other of the aspects of the bone, will be the result. The direction will be determined by the preponderance of power in some of the muscles, the unequal action of which in a state of fatigue principally produces the angular distortion at the joint; a facility for their operation being, perhaps, afforded, though that is problematical, by a relaxation of the lateral ligaments of the joint. The lassitude and atony of body resulting from long standing will induce the young sufferer to seek relief by some contortion of his body, throwing himself into a position in which he experiences temporary ease. He thus takes the burden from one set of muscles, to impose it on another; and, by this habit, the former acquire a certain degree of energy: the antagonising muscles, being proportionally debilitated, are unable to counteract the superior power of the other; these, then, not being sufficiently counterbalanced, they will pull the lower part of the limb against the upper in their direction, and ultimately establish its eversion or inversion, according as the influencing muscles are to the outer or the inner side. The weight of the whole body being transmitted to the astragalus, the pressure of that portion of the bone which is on the inner plantar ligament effects the relaxation of that ligament, the bones descend, and the arch of the foot (that beautiful mechanism by which elasticity of movement is secured,) is destroyed, and that flatness of foot, which is reported to be common among them, is produced. The female child incurs a greater danger: the pelvis, not being ossified, will give way to the pressure which itself transmits from above to the thigh-bones. This, of course, must narrow its diameter in the direction of the pressure, causing the evolution of the fœtus, in subsequent life, to be impeded, if not prevented; and thus rendering necessary that revolting operation in which one life at least is destroyed, and the other placed in imminent peril.

By a careful perusal of the book of nature, we find there is an ample provision for the duties of every state, and that those duties may be inferred from the degree of perfection which the various organs have attained. It teaches us that as, from infancy to beyond puberty, nature is occupied in progressively adding to and completing the body and the mind, so she intended that exertion of the respective organs of either one or the other should be graduated and apportioned to the extent to which she has carried her work. That, in fact, it is an initiatory state, in which the mental and physical organs are to be progressively *taught* those duties they w[illegible]ave actively to execute, when she herself shall have finish[illegible] her design.

I cannot resist the impression that many of the mill-owners have sanctioned the abuse and opposed its redress from mere thoughtlessness, and ignorance of its consequences. They established the custom without asking themselves if it were just, and interest has since prevented them from making the inquiry. I entertain a lively hope that, so soon as they are made sensible of the desolating effects of the system, and of the incapacity of the growing frame to withstand them, even they will acknowledge that wealth and power are acquired at too high a price by the introduction and perpetuation of deformity and disease, by the abridgment of the utility of man, and by the inordinate sacrifice of life. There are among them men of high character, who profess (and I doubt not for a moment, sincerely,) to feel acutely the miseries of the labourers in the plantations of the West; and who manfully advocate the restitution of what they deem their rights. They have made eloquent appeals in behalf of those they have never seen, and of whose condition they are entirely ignorant. I blame them not; but, while they are so alive to the oppression of the well-fed negro, whose hours of daily labour are limited to nine, and the services of whose children a planter cannot appropriate before the age of fourteen, it is deeply to be regretted they were ignorant that at home there were thousands upon thousands, in favor of whom their benevolence might be judiciously exercised, and whose oppression far exceeded the alleged thraldom of the slave.

Duke street, Westminster; Nov. 1832.

CRITICAL ANALYSES.

Quæ laudanda forent, et quæ culpanda, vicissim,
Illa prius, cretâ; mox hæc, carbone, *notemus*.—Persius.

A Treatise on the Urethra; its Diseases, especially Stricture, and their Cure. By Benjamin Phillips, author of "A Series of Experiments made to demonstrate that Arteries may be obliterated without Ligature, Compression, or the Knife."—8vo. pp. 319; two plates. Longman and Co., London, 1832.

The subject selected by Mr. Phillips is one devoid neither of interest nor importance; and the manner in which it has been treated in his essay is plain, practical, and useful. We are not amongst those carping critics who are continually craving for something new; whose morbid appetites refuse to digest wholesome and nutritious food, merely because to some parts are wanting the excitement of novelty; for we are well aware that value often holds an inverse ratio to newness. But, even with all our tolerance in these respects, we think we could have excused the (shall we say, vain) repetition of much of the anatomical details; and the proportion of quoted pathological matter we think rather more than the little spice the author has mixed with it required: for the surgical epicures, the menstruum is too abundant; and for the Podalirian babes, the pure milk of science flows in much too scanty streams. Yet what could the author do? We sympathize with him in his dilemma; for, had these materials been rejected, to what a ghost-like *libellum* this portly volume would have shrunk!

We are glad to find, by some incidental notices in the earlier pages, that the doctrine of *epigenesis* is making way, and becoming familiar in this country, where, but a short time since, the very meaning of the word, as anatomically applied, was in general but little understood. By means of this doctrine, the structure of the prostate is here very prettily explained.

"Before I terminate this chapter, I may be permitted to say a few words on the development of the prostate, as established by Serres; because it may serve to throw some light on a subject which has given rise to much discussion: I mean the existence or non-existence of a third lobe, so strongly insisted on by Sir E. Home, and previously noticed by Morgagni. Though the prostate does not actually constitute an essential part of the urethra, yet its connexion with it is so intimate, and the question appears of so much importance, that I shall briefly describe the phenomena of the development of that organ.

"Primitively, in the human embryo, we do not find the prostate; neither do we perceive it until the termination of the second month. At that period it is formed of four lobes; and this multilobular division corresponds to that of other organs in the embryo, as the kidneys, &c. From the fourth to the fifth month, the two posterior lobes unite to form one, the prostate at this period appearing to consist of three lobes; and from the sixth to the eighth month, all these lobes unite and form, as in the kidney, a unique organ, which embraces the origin or part of the origin of the urethra: yet, by an attentive dissection, we may discover, as in the kidney, traces of the primitive organization. It is evident, then, that if the union of these three portions be, under any circumstances, arrested, there may be presented a posterior and middle portion, which may be termed a middle lobe.

"When suppuration attacks those organs which originally present a multilobular character, and which afterwards, during the progress of organization, lose that character and assume the appearance of unique organs, it is found that its ravages are at first directed to those points which were last formed; and when their destruction is effected, the organ again presents its multilobular character. This often occurs in the kidney; and it is to a similar phenomenon that I refer the occasional appearance of the 'third lobe' of the prostate, which is very rarely demonstrable, except during a pathological condition of the organ." (P. 21.)

The disputed point as to the reproduction of mucous membranes, is very fairly and fully discussed by our author, and answered in the affirmative; an affirmation he thinks a necessary precursor to his advocacy of the caustic system of treating strictures.

The most prominent features of the third chapter are, the substitution of the term URETHRITIS for *gonorrhœa,* and the adoption of ORCHITIS for *hernia humoralis;* a change of which our author strongly urges the propriety, and to which we see no other objection than the certainty that they will not be generally employed. Our author is right, and on this point custom is wrong; but then custom is stronger than our author. However, he shall have the full advantage of his argument.

"In order to avoid misconception, I think it necessary to state that I intend to employ the word Urethritis for the purpose of designating all those affections of the urethra accompanied by a mucous, muco-purulent, or purulent discharge, and presumed to be dependent on inflammation of the mucous membrane by which that canal is invested.

"It is not from a simple desire for innovation that I propose this change in the nomenclature of these diseases: for no one can be more entirely sensible of the inconvenience which is occasioned by such changes than I am: but, when I reflect upon the inapplicability of the terms now employed to convey to the mind a knowledge of those particular diseases to which they are applied, I cannot help feeling convinced of the propriety of adopting some term which would be more precise in its signification than those now used. When I look at the terms gonorrhœa, blennorrhagia, and blennorrhœa, I not only see that, as terms, they are radically incorrect, even when used for the purpose of distinguishing any particular period of the disease, but, when applied, as they ordinarily are, to the disease generally, without reference to particular periods of its duration, I can no longer hesitate in adopting a term which is undeniably more precise in its signification and better adapted to the object required. To specify particular forms, I shall use the prefix acute or chronic, contagious or non-contagious." (P. 63.)

The section on the causes of urethritis is so well written that we cannot avoid quoting it entire.

"Urethritis is produced by different causes. The first of those to which I shall allude is purely mechanical, the second chemical, and the third virulent, by which I mean a disease produced by the application, upon the mucous membrane of the urethra, of contagious matter, either by connexion with a person suffering from contagious urethritis, or by any other mode of contact.

"Among the mechanical causes are venereal excesses between two individuals in whom the genitals are perfectly healthy. This may produce, in one or both, a more or less intense urethritis. This is a fact which constant observation verifies. We have seen a woman, in the apparent enjoyment of the highest health, a connexion with whom produced urethritis in all who had connexion with her, and who yet never suffered from urethral or vaginal disease. Cullerier mentions the case of a girl who had never been affected with urethritis or vaginitis, and in whom the organs, when examined by him, were perfectly healthy, who communicated to a young man urethritis of an extremely acute character; and examples of this kind might easily be multiplied, were it necessary. Masturbation, if violent, will produce urethritis; and indeed the disease is not unfrequent in girls addicted to this vice. In boys the disease is less frequently produced by this vice, from obvious causes; for it is produced only by the irritation occasioned by violent or continued friction of the mucous surface in girls; and, as contact with the interior of the urethra is not produced in the male, the difference is easily understood. The violence suffered by young girls from libertines very frequently produces a similar affection of the vagina, while the authors of such violence may be exempt from the disease, the contusion and distention of the sexual organs being sufficient to occasion the discharge. This is a fact which should be borne in mind by medical practitioners who are required to give evidence in courts of justice, in cases where forcible attacks have been made upon females. Great circumspection should be used in asserting the existence of contagion; for the person accused may prove the absence of the disease in his own person, and may exculpate himself by the testimony of his accusers. The accused may answer thus, 'You say this infant has a contagious discharge, and that the contagion has been communicated by me; but I am not suffering from the disease, and it is therefore impossible that I can have committed the violence imputed to me.' This has occasionally occurred. Two summers ago, an individual was accused, in Paris, of having committed violence on a young child, and of having communicated to her a contagious affection: he was examined by order of the court, and found perfectly healthy. It is true that cases frequently occur where violence is committed on young children by persons who are suffering from contagious urethritis, and who are in some instances prompted to the commission of the crime by a belief, still common among the vulgar, that by communicating the disease to a virgin they remove it from themselves.

"We may also enumerate, among the mechanical causes of urethritis, contusions of the perineum, the presence of stone in the bladder or in the urethra, strictures, and, in fact, every thing which may mechanically irritate the urethra, or the parts to which it is related, either directly or sympathetically. Urethritis produced from these causes is, however, rarely very acute (though much more frequent than is generally supposed,) and readily ceases when the exciting cause is removed.

"Chemical irritants also excite inflammation of the membrane of this canal, and produce augmented secretion; but urethritis from these causes is so rare, that we have no other well authenticated cases than those produced by Swediaur on his own person. He produced a very intense urethritis, altogether similar in character to that which has a venereal origin, by injecting into the urethra a weak solution of ammonia.

"It is very common to see urethritis succeeding to connexion with a woman during the existence of the menstrual flux; and, perhaps more frequently to connexion with women who have lochial or leucorrhœal affections.

"The cause considered by the world, and even by medical men, as the most common origin of urethritis, is the application of the substance secreted by mucous membranes which have been subjected to the contact of contagious matter: and this is, I apprehend, the only manner by which a contagious urethritis can be produced.

"The internal causes by which urethritis may be produced are not less numerous. Irritations of the alimentary canal, cutting the teeth (this is, however, an unfrequent cause, and is more rare in boys than girls,) certain aliments or medicinal substances, as beer, turpentine, tea, asparagus, cantharides, and spices, may occasion in the urethra an irritation which not only renders the emission of urine painful, but produces an abundant discharge from the urethra. Schenk speaks of a man who could produce a gonorrhœa at will by eating cress.

"'Irritations of the mucous membrane of the air-passages are often accompanied by urethritis.' If it be true that such diseases are occasionally accompanied by affection of the urethra, we may have less difficulty in admitting, with Blassius, that urethritis may be epidemic. I am not satisfied of these complications ever existing; but they have been observed by Fabre, Goulard, Morgagni, and Noel, in some very hot seasons which were very rapidly succeeded by cold, humid weather. We know that these sudden changes almost invariably affect mucous membranes generally; and I confess I can see no sufficient reason why they may not similarly affect that of the urinary passages. It may be said that the latter is less exposed to the action of those changes. That is, no doubt, true; and it is equally true that it is here much more rarely produced: but we see many persons with clothing insufficient to protect this membrane more effectually than that of the mouth.

"Again, diseases of the skin accompany or alternate with urethritis. Of these diseases, lepra appears to be the most frequent concomitant. That urethritis which is said to be produced by, or to accompany, lepra, was particularly frequent in the fifteenth century. May we believe that it is this which is so well described by Moses? Still, in spite of the imposing authorities who advocate such doctrines, in spite of their conviction that the disease produced by such causes cannot be distinguished from those succeeding to contagious intercourse, in defiance of their conviction that the symptoms, the varieties, the complications, the consequences, are identical, that the matter exhaled resembles perfectly in the one case to the other (being dependent in either case on the degree of inflammation,) I must elevate my feeble voice against this doctrine of identity; for, varied as have been my opportunities of watching these diseases, frequent as have been the opportunities afforded me of ascertaining the opinions of the greatest authorities on the subject, I feel no hesitation in laying down a positive opinion, in saying that the discharge proceeding from an urethritis produced by these causes can never produce a contagious disease of a similar character in the person upon whom it has been applied.

"In modern times, up to the present moment, I know only one person who affected to be able to distinguish an urethritis of a contagious character from that which was not so. Wedekind says that he has established a character by which it may be distinguished. The character consists in this, 'that, in men who have been infected during coitus, there is developed, immediately behind the meatus urinarius, two small lenticular tubercles, situated the one by the side of the other, and very sensible to the touch. In examining,' says he, 'many subjects who, after a suspected connexion were apprehensive of having contracted a contagious urethritis, I can each time announce before the appearance of the disease (after the formation of the tubercles,) whether the affection be contagious or non-contagious. When I do not feel these small bodies, contagious urethritis will not supervene, whatever may be the extent of the itching in the gland and the prepuce, and notwithstanding the heat in urining. They enlarge and become more sensible when the lips of the orifice of the canal begin to swell, and a mucous viscid humour bathes the gland. They enlarge at the commencement of dysury and the period of inflammation. These tubercles are always the most sensible part; they diminish in violence and sensibility in proportion as the disease decreases; but we cannot regard it as being entirely dissipated until they have become quite insensible. All appearance of the disease may disappear, not only for some days, but for entire months, the patient may believe himself completely cured; but a cold, an error in regimen, fatigue, excess in coitus with a healthy person, in fact, any thing which may irritate the urethra, may cause a return of the discharge, so long as these two tubercles are more or less sensible.' Such is the opinion of Wedekind. I need hardly say that his opinion is without foundation; for these tubercles are developed every day by simple irritation, and in persons who have never suffered from urethritis.

"The question has long been discussed, whether the matter secreted at the surface of a primitive venereal ulcer ever produces 'gonorrhœa,' and if the matter of 'gonorrhœa' ever gives birth to chancre? and, after all the elaborate investigations which have been resorted to for the purpose of determining this question, it is yet undecided." (P. 64.)

We shall pass by the sections on the symptoms and treatment of Urethritis, with the running observation, that our author speaks strongly, and with justice, of the benefits derived from the use of lunar caustic in protracted urethral discharges: he recommends the application in substance, but we believe the best mode of using this powerful agent, in most cases, will be found to be smearing the bougie with a strong unguent of nitrate of silver, such as is used so successfully in ophthalmia.

From the chapters on the "definition, origin, classification, situation, and symptoms of Stricture," and on the "history of the Treatment of Strictures," with a "review of the various Remedies, dilatation, (bougies, and sounds,)" we shall make but a single extract; and yet that which closes these dissertations will suggest to our well-informed readers the course of the argument as well as much more lengthened extracts.

"I have now passed in review the methods of treating strictures by bougies and by sounds, and have, I submit, established their inapplicability in the vast majority of cases. I have shown that by far the greater number of strictures are an effect of induration existing in the parietes of the canal; that this induration can only be removed by dilating bodies, through the medium of absorption; that, if induration has long existed, absorption can no longer be performed, and that bougies or sounds can therefore succeed in the earliest stages of the disease only; whilst it is notorious that application for medical assistance is rarely made until the disease has acquired a formidable character. Absorption being, then, available for the cure of strictures in a very early stage of the disease only, and compression being, as I apprehend, wholly inefficient for the removal of the obstruction, there remains but one mode by which, in the case of organic stricture, we can restore the canal to its original capacity, and that mode is destruction of the stricture; and this is effected by means of a caustic substance or a cutting instrument." (P. 192.)

Mr. Phillips has invented an instrument which seems well adapted for the application of caustic to the stricture to be destroyed, without injuring more than possible the sound parts adjacent. This consists essentially of a canula, in which is concealed a rod bearing at its end the caustic, which can be protruded at pleasure, and is thus much more manageable than the common armed bougie. With regard to the subsequent treatment, he observes,

"I am decidedly of opinion, that when stricture has been completely destroyed, either by caustic or incision, the use of bougies has ordinarily a tendency to retard the completion of the cure; and we always find that patients do not urine without inconvenience until the use of bougies has been entirely abandoned. I would here, then, distinctly place as a principle (to which I conceive observation and reasoning tend,) that dilatation is generally useless as an auxiliary means to cauterization, and may sometimes be injurious." (P. 213.)

On the subject of Caustic, he continues, with reference more especially to another new instrument,

"As the great majority of strictures are the effects of induration of the tissues, which has generally existed for a considerable time before application is made to the practitioner, who is seldom indeed consulted until the stream of urine is so inconsiderable as to occasion much inconvenience to the patient, and as it has been shown that dilatation has then ceased to be effective for the removal of the disease, either caustic or cutting must be resorted to. Much of the obloquy that has been heaped upon cauterization has unquestionably been occasioned less by the action of the caustic than by the unskilful mode in which it has been applied; and it is certain that, from the improvement in the instruments by which the application is made, no apprehension need, in the present day, be entertained that the caustic will come in contact with the healthy tissue. I have always felt the strong objections which present themselves to the application of caustic to the anterior surface of a stricture, as well as the very serious accidents to which such application may give rise. It has, therefore, been for some time an object of anxiety with me to render the treatment by caustic free from these objections, by devising some means of penetrating the stricture, however small may be its orifice, and effecting its destruction from within outward; and now I submit the following modifications of treatment in such cases.

"Should the orifice of the stricture be too small to admit of the introduction into it of an instrument bearing the caustic, it may be immediately enlarged sufficiently, by the introduction of a cutting instrument, which will be found described and represented at the end of the work. Immediately after withdrawing the instrument, which will sufficiently enlarge the orifice, the instrument bearing the caustic should be introduced, and the application made to the interior of the stricture. With these modifications, a case of stricture from advanced induration can scarcely, I think, occur, in which the use of caustic may not be resorted to with the most perfect safety and the most certain success. Even when the orifice of the stricture is so small as to admit of the evacuation of urine only drop by drop, it may be instantly enlarged, the caustic applied, and all apprehension of retention immediately removed. Taking, then, into consideration all the circumstances connected with cauterization, firmly impressed as I am of the necessity of entirely destroying the induration, convinced too, from experience, of the perfect safety with which caustic may be applied, and the facility with which, under the modification I propose, it may be placed in contact with the interior of every stricture, feeling that this is the desideratum which has been long sought, and that nothing now appears wanting to ensure the success of the application, I earnestly recommend its adoption by the profession, asking from the operator nothing but the precautions which I have recommended. I here terminate the remarks I have to make on cauterization, and shall proceed to describe the treatment by incision." (P. 216.)

The instrument here referred to is called a *urethrotome*, and consists of a circular knife, enclosed in a canula, and guarded by a probe-pointed stiletto, which, if possible, should be passed through the stricture: but, where this can be done, it must be a question whether caustic should not supersede its use. The mode of operating with it, and the cases for which it is destined, are described as follows:

"In those cases where the stricture is of a valvular kind, where it retreats before the bougie, and where, from this circumstance and its trifling extent, some uncertainty would attend any attempt to cauterize it, the cutting instrument I have invented may be employed with the most complete success. Where the induration has become so excessive that the indurated matter acquires almost a horny texture, and where the extent of surface which it occupies is inconsiderable, and, lastly, when any circumstance renders it necessary that the stricture should be very rapidly destroyed, in all these cases I do not hesitate in recommending the employment of this instrument. By the operation which I have introduced, the obstacle is instantly removed, after which an elastic catheter is passed into the bladder, for the purpose of protecting the incised portion of the canal from the irritation which would be produced by the escape of the urine, during the evacuation of the contents of the bladder. The instrument which I have constructed for the purpose is described in the Appendix, where a representation thereof is given. It presents a circular cutting edge, is introduced into the urethra in a canula, and when the canula is in contact with the stricture, a probe, or stilet, situated in the centre of the cutting portion, is gently introduced into the orifice of the stricture, and serves to maintain the instrument in the proper position in the canal. The cutting instrument is then advanced, placed in contact with and pressed against the stricture, a circular motion being at the same time given to it, similar to that given to a trephine, and in two or three moments the stricture is removed and the canal free. The operation may be performed with much facility, is wholly unattended by danger, and the pain is not much more considerable than that which accompanies the application of caustic.

"It possesses then, in the cases I have mentioned, the following advantages over caustic: that of being more completely under the control of the operator, of creating less inconvenience than is occasioned by cauterization (a single operation being, under any circumstances, sufficient for the removal of the disease), and of being applicable in cases when caustic, either from excessive induration, nervous irritability, or other circumstances, cannot be so advantageously applied." (P. 221.)

"There is one more circumstance connected with cauterization and incision, to which I shall allude; and that is the apprehension entertained by many persons of the occurrence of hemorrhage, which they think likely to succeed the judicious application of either of these remedies. No hemorrhage which is likely to succeed the skilful application of either of these remedies, need occasion any disquietude, except in cases of extreme debility: for, before the blood-vessels enter the mucous system, they become capillary. If, however, hemorrhage should prove troublesome, cold water may be dashed upon the penis and surrounding parts, or injected into the urethra, and one or other of those applications will generally be found effectual to arrest the discharge. If, however, the hemorrhage have proceeded to such an extent as justly to inspire inquietude, if the means I have already recommended should have failed, it may be necessary to resort to pressure; and for this purpose we introduce into the canal of the urethra the largest size bougie which can be admitted; and if this should be insufficient, it should be accompanied by external pressure along the penis and perineum." (P. 223.)

In the classification of strictures there are some interesting generalizations.

"The observations were made in 119 cases of stricture.

"Of these, 117 had suffered from urethral discharges.

In 49, astringent injections had been used.
5 had been subjected to forced catheterism.
29 had, during the progress of the disease, complete retention of urine.
6, retention of spermatic fluid.
6, catarrh of the bladder.
7, paralysis of the bladder.
13, urinary fistula.
6, urinary abscess, with fistulous communication with the urethra.
4, spasmodic affection of the urethra without organic affection.
4, urethral hemorrhage, previous to and during treatment.
14, tumefaction of the prostate.
5, tumefaction of the testicle.
8, diseases of the skin.

"This is then a fair estimate of the frequency with which individual complications occur. Of the 119 cases,
36 were treated by dilatation; of whom
11 only were cured by that means, and, of the remainder,
19 were afterwards cauterized successfully.
81 were cauterized primarily; of these
72 were successfully treated by this means.
Of the 72 who were successfully cauterized,
13 had relapses.
Of the 72 who were cauterized.
65 were treated by consecutive dilatation.
Of these, 13 had relapses.
In 7, consecutive dilatation was not employed, and no relapse occurred.
5 cases were incised by the urethrotome,
4 of them successfully, the obstruction being at once removed: in the other the operation was not completed.

"In seven cases of cauterization, when the cure was permanent, and in the four cases by incision, consecutive dilatation was not employed.

Of the thirty-six cases treated by dilatation,
4 were in persons above 60,
20, in persons between 40 and 60.
8, in persons between 25 and 35,
4, in persons under 25.

"Of those above 60, 2 failed; amelioration only having been produced.

"Of those between 40 and 60, 4 were cured and 16 failed; the reappearance of the disease soon following the suspension of the treatment.

"Of those between 25 and 35, 3 were cured and 5 failed, the disease soon reappearing.

"Of those under 25, all were cured.

"In those nine cases where cauterization failed, the parties were of the following ages: 42, 45, 58, 60, 76, 63, 69, 76, 77.

"The patients of sixty-nine and seventy-seven died of cerebral affection during the treatment; the patient of seventy-six became impatient and was lost sight of; the four younger patients, in consequence of a relapse, refused to undergo further treatment: of the other two I can give no account.

"In the 72 cases where cauterization was successful,

8 were above the age of 60; of these were relapses, 3.
24 were between 45 and 60; of these were relapses, 6.
22 were between 35 and 45; of these were relapses, 3.
18 were between 20 and 30; of these was relapse, 1.

In the five cases of incision,

4 were between 45 and 60; these were all cured.
1 between 40 and 45, not cured.

The cases then, during the progress of which total retention occurs, are in the proportion of one in four. Those in which perineal abscess occurs are as one in six. Those in which fistulæ occur are as one in nine. Those in which spasmodic strictures, in the absence of organic disease, occur, are as one in thirty. Those in which urethral hemorrhage occurs, in a similar proportion. The cures by dilatation are as one in three. The cures by cauterization are as fourteen or fifteen in sixteen. I am not in a condition to state the proportion of relapses after dilatation: those after cauterization are as one in seven or eight; and the age which afforded the greater proportion of relapses was above sixty. Of the cases of stricture which are presented, the proportion occurring at given periods of life is as follows:

From sixty to seventy, one in twelve.
—— fifty to sixty, two in eleven.
—— forty to fifty, three in eleven.
—— thirty to forty, four in thirteen.
—— twenty to thirty, one in seven." (P. 226.)

The chapters on the "Treatment of Retention of Urine," "Puncture of the Bladder and Urethra," "Abscesses, Fistulæ," "Diseases of the Prostate," and the appendix of Cases, although necessary, we suppose, to complete the author's design, do not afford any thing of sufficient interest for translation to our pages. We, however, think, when condemning the operation of opening the urethra on the vesical side of the stricture, the author should have referred to that very successful modification which has been several times performed by Mr. Mayo, and of which we shall hope to have a full account in that gentleman's forthcoming work "on the Diseases of the Pelvic Viscera."

Medico-Chirurgical Transactions. Vol. XVII.—8vo. pp. 527; four plates. Longman and Co., London.

(Concluded from page 43.)

THE "*Account of some Experiments on the use of Styptics in Hemorrhage from Arteries,*" by Mr. CÆSAR HAWKINS, will be found replete with interest: they confirm the views we ventured to take when MM. TALRICH and HALMA-GRAND had persuaded themselves, and wished to persuade the world, that they had discovered a potent styptic, which could arrest the most violent arterial hemorrhage. Mr. Hawkins has shown that ordinary styptics, such as nutgalls, nay, even plain cold water, or simple pressure, will effect as much as their boasted "Liquide hæmostatique." We place little reliance on any hæmostatique application, when large arteries are wounded, besides the ligature: nevertheless, we publish, among our Collectanea, some further account of reputed potential styptics.

We would fain enrich our pages with extracts from Mr. WOOD's essay "*on some Effects of Inflammation of the Membranous Lining of the Larynx, with Suggestions relative to the Operation of Bronchotomy, and incidental Remarks on Spasm and Wounds of the Throat;*" as well as from Mr. HEWLETT's "*Case of extensive Ovarian Disease;*" but space forbids: we cannot, however, pass by Mr. BRODIE's "*Cases of Chronic Abscess of the Tibia,*" for they have thê recommendation both of importance and originality.

"CASE I. Mr. P., about twenty-four years of age, consulted me in October 1824, under the following circumstances.

"There was a considerable enlargment of the lower extremity of the right tibia, extending to the distance of two or three inches from the ankle-joint. The integuments at this part were tense, and they adhered closely to the surface of the bone.

"The patient complained of a constant pain referred to the enlarged bone and neighbouring parts. The pain was always sufficiently distressing: but he was also liable to more severe paroxysms in which his sufferings were described as most excruciating. These paroxysms recurred at irregular intervals, confining him to his room for many successive days, and being attended with a considerable degree of constitutional disturbance. Mr. P. described the disease as having existed more than twelve years, and as having rendered his life miserable during the whole of that period.

"In the course of this time he had been under the care of various surgeons, and various modes of treatment had been resorted to without any permanent advantage. The remedies which I prescribed for him were equally inefficacious. Finding himself without any prospect of being relieved by other means, he made up his mind to lose the limb by amputation; and Mr. Travers having seen him with me in consultation, and having concurred in the opinion that this was the best course which could be pursued, the operation was performed accordingly.*

"On examining the amputated limb, it was found that a quantity of new bone had been deposited on the surface of the lower extremity of the tibia. This deposition of new bone was manifestly the result of inflammation of the periosteum at some former period. It was not less than one third of an inch in thickness, and when the tibia was divided longitudinally with a saw, the line at which the new and old bone were united with each other was distinctly to be seen.

"The whole of the lower extremity of the tibia was harder and more compact than under ordinary circumstances, in consequence, as it appeared, of some deposit of bone in the cancellous structure, and in its centre, about one third of an inch above the ankle, there was a cavity of the size of an ordinary walnut, filled with a dark-coloured pus. The bone immediately surrounding this cavity was distinguished from that in the neighbourhood by its being of a whiter colour, and of a still harder texture, and the inner surface of the cavity presented an appearance of high vascularity. The ankle-joint was free from disease.

"It is evident that if the exact nature of the disease had been understood, and the bone had been perforated with a trephine, so as to allow the pus collected in its interior to escape, a cure would probably have been effected, without the loss of the limb, and with little or no danger to the patient's life. Such, at least, was the opinion which the circumstances of the case led me to form at the time; and I bore them in my mind, in the expectation that at some future period I might have the opportunity of acting on the knowledge which they afforded me, for the benefit of another patient.

"Case II. Mr. B., at that time twenty-three years of age, consulted me in the beginning of February 1826.

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* "It is right that I should state briefly the termination of the case; especially as the circumstances attending it were probably connected with a peculiar condition of the nervous system, occasioned by the long continuance of the local disease. Unfortunately, I preserved no notes of this part of the case at the time, but I have no doubt that my recollection is accurate as to the following particulars. The patient bore the operation with the utmost fortitude, but immediately afterwards he was observed to become exceedingly irritable, restless, and too much disposed to talk. Unfortunately, in the evening there was hemorrhage from the stump; which ceased, however, on the removal of the dressings and coagulum. During the night he had no sleep; and on the following day he was restless and incessantly talking, with a rapid pulse. These symptoms became aggravated. There was no disposition to sleep, and the pulse became so rapid that it could be scarcely reckoned. Until the third or fourth day, the tongue remained clean and moist; after this period it became dry and somewhat brown, and there was constant delirium. The pupils were widely dilated, and the sensibility of the retina was totally destroyed, the glare of a candle not being perceptible even when held close to the eye. Death took place on the fifth day after the operation. No morbid appearances were observed on the post-mortem examination.

"There was a considerable enlargement of the right tibia, beginning immediately below the knee, and extending downwards so as to occupy about one third of the length of the bone.

"Mr. B. complained of excessive pain, which disturbed his rest at night, and some parts of the swelling were tender to the touch. The knee itself was not swollen, and its motions were perfect.

"He said that the disease had begun more than ten years ago, with a slight enlargement and pain in the upper extremity of the tibia; and that these symptoms had gradually increased up to the time of my being consulted. Various remedies had been employed, from which, however, he had derived little or no advantage.

"Having inquired into the circumstances of the case, I was led to regard it as one of chronic periostitis; and I adopted the following method of treatment: An incision was made longitudinally on the anterior and inner part of the tibia, extending from the knee four inches downwards, and penetrating through the periosteum into the substance of the bone. The periosteum was found considerably thickened, and the new bone, which had been deposited beneath, was soft and vascular. The immediate effect of the operation was to relieve the pain which the patient suffered, so that he slept well on the next and every succeeding night. After this I prescribed for him a strong decoction of sarsaparilla. The wound gradually healed, and it was for some time supposed that a perfect cure had been accomplished.

"The enlargement of the upper extremity of the tibia, however, never entirely subsided; and in August 1827, pain was again experienced in it. At first the pain was trifling, but it gradually increased, and when I was again consulted, in January 1828, Mr. B. was unable to walk about, and quite unfit for his usual occupations. At this period the pain was constant, but more severe at one time than at another, often preventing sleep during several successive nights. The enlargement of the tibia was as great as when I was first consulted; and the skin covering it was tense and adhering more closely than is natural to the surface of the bone.

"Some remedies which I prescribed were productive of no benefit. The patient's sufferings were excruciating, and it was necessary that he should, if possible, obtain immediate relief. The resemblance between the symptoms of this case and those of the case already described were too obvious to be overlooked. It appeared highly probable that they depended on the same cause; and I therefore proposed that the bone should be perforated with a trephine, in the expectation that an abscess would be discovered in its interior. To this the patient readily assented, and accordingly the operation was performed in the beginning of March 1828.

"My attention was directed to a spot about two inches below the knee, to which the pain was particularly referred. This part of the tibia was exposed by a crucial incision of the integuments. The periosteum now was not in the same state as at the time of the former operation. It was scarcely thicker than natural, and the bone beneath was hard and compact. A trephine of a middle size was applied, and a circle of bone was removed extending into the cancellous structure, but no abscess was discovered. I then, by means of a chisel, removed several other small portions of bone at the bottom of the cavity made by the trephine. As I was proceeding in this part of the operation, the patient suddenly experienced a sensation which he afterwards described as being similar to that which is produced by touching the cavity of a carious tooth, but much more severe, and immediately some dark coloured pus was seen to issue slowly from the part to which the chisel had been last applied. This was absorbed by a sponge, so that the quantity of pus which escaped was not accurately measured, but it appeared to amount in all to about two drachms. From this instant the peculiar pain belonging to the disease entirely ceased, and it has never returned. The patient experienced a good deal of pain, the consequence of the operation, for the first twenty-four hours, after which there was little or no suffering. The wound was dressed lightly to the bottom with lint. Nearly six months elapsed before it was completely cicatrized: but in about three months from the day of the operation, Mr. B. was enabled to walk about and attend to his usual occupations. He has continued well to the present time (January 7, 1832); and the tibia is now reduced in size so as to be scarcely larger than that of the other leg. No exfoliation of bone has ever taken place.

"Case III. In the beginning of January 1830, Mr. S., thirty-four years of age, consulted me on account of the following symptoms.

"The lower extremity of the left tibia was considerably enlarged; the skin covering it was tense, and adhered closely to the parts below. The patient complained of a constant aching pain, which he referred to the enlarged bone. Once in two or three weeks there was an attack of pain more severe than usual, during which his sufferings were excruciating, lasting several hours, and sometimes one or two days, and rendering him altogether incapable of following his usual occupations. The pain was described as shooting and throbbing, worse during the night, and attended with such exquisite tenderness of the parts in the neighbourhood of the ankle that the slightest touch was intolerable.

"Mr. S. said that, to the best of his recollection, the disease had begun eighteen years ago, in the following manner. On going to bed one evening he suddenly experienced a most acute pain in the inner ankle. On the following morning he was unable to put his foot to the ground, on account of the agony which every attempt to do so occasioned. Leeches were applied several times, and afterwards blisters, but the pain increased notwithstanding. After some weeks an abscess presented itself and broke. This was followed by some mitigation of the symptoms. Soon afterwards another abscess formed and broke in the neighbourhood of the first.

The two abscesses remained open for a considerable time, and then healed rapidly. Mr. S. now began to regain the use of the limb, and by degrees was able to walk as usual.

"During the following summer he had a recurrence of pain in the inner ankle, without any further formation of abscess. For eight or ten years afterwards there were occasional attacks of pain, lasting one or two days at a time; the intervals between them being of various duration, and in one instance not less than nine months. After this the attacks recurred more frequently, and during the whole of the last two years the symptoms were nearly as severe as at the time of my being consulted.

"On examining the limb, I was struck with the resemblance which it bore to that of the limb in each of the two preceding cases. There was also a remarkable resemblance in the symptoms as described by the patient, and I could not but suspect that they depended on a similar cause. I requested that Mr. Travers, who had attended one of the former cases with me, should be consulted: and he agreed with me in the opinion that probably an abscess existed in the centre of the tibia, and that it would be advisable to perforate the bone with a trephine, with the view of enabling the contents of the abscess to escape.

"Accordingly I performed the operation, with the assistance of Mr. Travers, on the 31st of January. A crucial incision was made through the skin, the angles of which were raised so as to expose a part of the bone above the inner ankle, to which the pain was especially referred. A small trephine was then applied, and a circular portion of bone was removed extending into the cancellous structure. Other portions of bone were removed with a narrow chisel. At last about a dram of pus suddenly escaped and rose into the opening made by the trephine and chisel. On further examination, a cavity was discovered from which the pus had flowed, capable of admitting the extremity of the finger. The inner surface of this cavity was exquisitely tender; the patient experiencing the most excruciating pain on the gentlest introduction of the probe into it.

"He passed a tolerable night, and suffered but little on the following day. He continued to go on favorably until the 5th of February, when a violent inflammation attacked the limb immediately above the inner ankle. In spite of the application of leeches, an abscess formed, which in the course of six or seven days presented itself immediately below the part at which the trephine had been applied. An opening was made with a lancet, and a considerable quantity of pus escaped, which had apparently formed between the periosteum and bone, the latter being felt exposed at the bottom of the abscess. During the following month the inflammation excited by the operation continued, and several abscesses presented themselves in the neighbourhood of the first. These, however, all healed favorably, without any exfoliation of bone taking place. The cavity made by the trephine became filled up by granulation, and the wound gradually cicatrized. From the time of the operation, the peculiar pain from which the patient had previously suffered was entirely relieved: and it was not long before he was quite restored to health, and able to walk and pursue his occupations without interruption. I have seen him lately, nearly two years from the time of the operation having been performed, and he continues perfectly well." (P. 239.)

Dr. MARSHALL HALL's "*Experimental Investigation of the Effects of the Loss of Blood*" would be injured by abridgments; we, therefore, are unwillingly compelled to pass it by unnoticed; as likewise Mr. TRAVERS' continuation of his "*Observations on the Local Diseases termed Malignant.*"

Had we not already laid this volume under extensive contributions, Mr. HOWSHIP's memoir "*on the Phenomena and Appearances from partial Obstruction of the Cerebral Circulation*" would have furnished an interesting extract; and several might have been taken from Mr. SHAW's paper on "*a Peculiarity in the Conformation of the Skeleton in Rickets,*" in which he very clearly points out the difference between rachitis, properly so called, and that morbid condition whence distortion of the spine ensues, and which is remarkable for its frequency in females, commencing usually about the age of twelve or fourteen.

The late Mr. JOHN SHAW, it is well known, paid much attention to diseases of the osseous system; and his brother, the author of the memoir under consideration, appears to be worthily treading in his footsteps. The most important practical point arrived at by their researches is the fact that, unless there be at the same time marks of rickets in some of the long and solid bones, in whatever state of distortion the spine and ribs may be, the bones of the pelvis will not be found distorted. This is contrary to the generally received opinion; for many persons still believe that the artificial means resorted to for the support of the spine will distort the pelvis; whereas, if the principles here sought to be established are true, no such effect need be dreaded.

In order to establish this doctrine on a philosophic basis, Mr. Shaw introduces, very appropriately, a summary account of the changes which the human figure undergoes in its development; and then, from a very extended series of observations and admeasurements, shows that, in rachitis, the natural development is arrested, as well as perverted; and that the evolution of various parts, which at different ages are peculiarly active in their growth, is stayed, so that the due proportions of the several parts of the skeleton become interfered with: thus, that in rickety persons, the lower limbs remain comparatively much shorter than the upper; the head and arms of an adult being united, as it were, to the pelvis and inferior extremities of a child.

"The capacious head and diminutive pelvis of the fœtus are provisions for its safe delivery from the womb. But the same configuration, it is obvious, would be incompatible with the privilege enjoyed by man of carrying his body erect. Accordingly, before the child can leave the nurse's arms, or before the human form is completed, there is a remarkable change in the proportions of the figure: the pelvis and the legs, which form the base on which the trunk is sustained, become the larger and preponderating parts, while the head, upper extremities, and thorax are comparatively light. As an example of the extent of this alteration, the centre of gravity in the fœtus, immediately before birth, is situated as high up as the scrobiculus cordis, while in the adult, according to Borelli, it is between the two hip-joints. With the view of obtaining a more accurate conception of the change which thus take place in the relative proportions, the following measurements of the skeleton were made, in the infant newly born, and in the adult. The entire length of the child, measured for this purpose, was eighteen inches and a quarter; the dimensions of the adult were found by measuring four individuals, whose mean height was five feet eight inches. In the infant, the length from the apex of the head to the highest part of the spine of the ilium, was two inches greater than the length from the same point of the ilium to the heel; that is, the length of the superior division exceeded that of the inferior by one ninth of the entire height. In the adult, the upper division was less than the lower by sixteen inches; or, in other words, it was one fourth of the whole height shorter than the inferior division. Upon comparing the size of the head with that of the pelvis, a similar variation was observed; the circumference of the head in the newly-born child was twice that of the pelvis; whereas in the adult it was less by nearly a half. Lastly, on contrasting the length of the arms and of the legs, it was found that in the child, the former, when measured from the acromion process to the tip of the middle finger, were exactly of the same length as the latter, measured from the greater trochanter to the heel; but in the adult the arms were twelve inches shorter than the lower extremities. In illustration of the same fact, we may observe that the humerus, in the fœtus near the sixth month, is equal, both in size and weight, to the femur; but at adolescence the femur is fully three times the weight of the humerus.

"From these calculations we may perceive what a remarkable accession to its growth the inferior division of the body acquires in contrast with the superior division. We are authorized, therefore, to conclude that the lower extremities, including under that term the pelvis and the bones of the leg, advance with a greater activity between birth and manhood, than the head, thorax, spinal column, or upper extremities: and that it is owing to this difference in the rapidity of the development of the several parts of the frame that the human figure becomes changed, as we have observed, in its proportions.

"*Of the influence which Rickets has in retarding the growth and changing the proportions of the Skeleton.* If we revert now to the peculiarity of the conformation which characterizes the skeleton affected with rickets, we shall perceive that, although it differs from the adult skeleton, it bears an obvious resemblance to that of the child: the bones may be larger, they may have the firmness and strength which belong to the mature subject, the marks of the sutures and epiphyses may be obliterated; but the superior division of the frame preponderates over the lower as it does in infancy. Reflecting upon this similarity, it is naturally suggested that the cause of the remarkable form of the rickety skeleton must be a defect in the process of growth occasioned by the prevalence of that disease in the osseous system. If the interruption which we are supposing takes place while the change of the configuration just described is in the course of being accomplished, it is evident that the skeleton will retain in adolescence the peculiarities that belong to its primitive form. It might appear, at first sight, as if the peculiarity were owing to the defect of growth falling more exclusively upon the lower division of the frame than upon the upper, inasmuch as the bones of the pelvis and of the legs suffer a greater loss in their dimensions than the other parts. But this difference is to be accounted for by the process of development being more active in the lower extremities than in the superior division, as has just been shown; which makes the stoppage of the growth more strikingly exhibited in them.

"The distorted skeleton, marked No. 3 in Table 1., was found to be of the same height, when measured along the course of its curvatures, as a girl whose age was eleven years and a half; they were both fifty-one inches and a half in height. But the following contrast was observed in their relative dimensions: In the girl, the length from the apex of the head to the spine of the ilium was eleven inches and a half less than from the ilium to the heel; but in the rickety skeleton the superior division was only five inches and a half less than the inferior. The arms of the girl were nine inches shorter than the extent from the ilium to the heel; but in the rickety skeleton the difference was only three inches and a half. It thus appears, that if we desire to make a comparison between the natural skeleton and that of this deformed person, we must take the skeleton of a child still less advanced than this; that is to say, about three or four years of age." (P. 451.)

The following remarks on "the relative proportions of dwarfs and tall individuals," although not entirely new, are physiologically curious.

"The examples of dwarfs and of persons whose height surpasses the common standard, serve to illustrate our subject. They show how much the relative proportions of the body may be varied according as the growth is either retarded or accelerated. In the dwarf, where the development is a slow and imperfect process, the superior half of the body retains, at maturity, the same preponderance over the lower, which naturally belongs to it at birth. An interesting example of this is to be seen in the skeleton of the dwarf, Crachami, preserved in the Museum of the College of Surgeons.

Although this individual lived to the age of nine years and a half the skeleton exhibits the very same relative proportions which belong to the infant at the age of two or three months; indeed, if it were not for the advanced condition of the teeth, the closing together of the sutures, and the general firmness of the bones, we should not be able to distinguish it from a skeleton of that early period. In the same museum there are the portraits of five other remarkable dwarfs, among which is that of the Polish dwarf Boroawloski; and in him the peculiarity which is here described is very distinctly presented. It can at once be observed, that although his features, and the court dress with which he is equipped, bespeak a person of mature years, the size of his head, the length and capaciousness of his body, the narrowness of his hips, and the disproportionate shortness of his legs, betray the original configuration of the child. It accordingly appears that the proportions of the dwarf correspond with those of the individual affected with rickets; for in both the lower division of the body fails to acquire that superiority of bulk over the upper division which naturally belongs to the figure in adolescence.

"But as the interruption to the process of growth causes the adult to retain the peculiarities of the child's figure, so it may be shown that the acceleration of the process makes the tall individual become a true caricature of the mature form. The lower extremities being endowed with a superior activity of development, they expand and elongate in the tall person, under the increased impulse given to the whole growth, with a rapidity that soon destroys the proportions of the body. Thence it is a general remark, that persons distinguished for their unusual height, have their lower limbs disproportionately long, in comparison with the size of their trunk. To illustrate this, I took the measurements of a gentleman whose height was six feet four inches and a half, and contrasted them with the measurements of an individual of the proper proportions, whose height was five feet eight inches. It was found, in the first place, that the length from the apex of the head to the spine of the ilium was only half an inch greater in the tall person than in the other; but below the same point of the ilium, the tall individual measured as much as eight inches more than the other. 2dly, The circumference of the head was only one inch and a quarter greater in the tall individual than in the person of common proportions; but in the pelvis the difference amounted to seven inches. 3dly, The length of the arms in the tall person was less than that from the spine of the ilium to the heel by sixteen inches; while in the other individual the difference was only eleven inches and three quarters. This shortness of the arms, contrasted with the length of the legs, would have caused, it is obvious, a remarkable deformity of the figure, if the vertebral column had not also been peculiarly short: but the spine, being comparatively defective in height, allowed the arms to hang down to their usual extent in this gentleman, and thus the difference in the relative length of the upper and lower limbs was not easily noticed; yet it is to be observed, that the increase in the length of the arms was only equal to the half of what it was in the lower extremities. 4thly, The difference between the length of the upper and of the lower divisions amounted, in the tall individual, to one third of his entire height; while it was only one quarter in the person of common proportions." (P. 457.)

Without attempting to demonstrate the precise nature of that morbid condition which causes the lateral curvature of the spine, we think Mr. Shaw has shown that it does not depend upon rachitis; and, after adverting to the inconsistency of such an opinion with the phenomena observed, and the treatment most successfully pursued, he very justly continues,

"Before assuming that such formidable diseased actions gave rise to the common lateral distortion, it is remarkable that the authors have not attended more to the natural softness of texture and natural flexibility, both of the spine and the ribs, which are peculiar to the period of life when this deformity commences; and which condition is characteristic more especially of the bones of young females. As there are, however, certain circumstances unconnected with disease, which tend to increase the natural weakness of these parts, and to render them still more liable to become distorted from slight causes, I may be permitted shortly to enumerate them. 1st. The restraints to which young girls, especially in the higher classes of society, are subject, owing to the system of their education, as they interfere with the natural exercise of the body, deprive the muscles of the spine of their strength; and tend also to make the bones and the ligaments more spongy and weak. 2d. This debility of the muscular frame makes it irksome for the young patient to sit with the spine erect for any length of time; and accordingly, a disposition to lounge or to stoop is the consequence: thus the weight of the body, instead of being sustained perpendicularly upon the spinal column by the active exercise of the muscles, is allowed to hang, as it were, upon the ligaments which bind the processes of the vertebræ together, and these parts become unnaturally elongated. It is in this manner that the numerous joints of the spine, amounting to seventy-two, become relaxed, and are prepared to yield in whatever direction a particular habit may induce them. 3d. The spinal column represents a pillar of a very remarkable structure; it is not only flexible, and made to sustain a perpendicular weight, but it is supported upon a basis that is constantly shifting its level. The pelvis, on which the spine rests, is seldom for a moment placed horizontally. For example, the natural position of ease while standing, is to stand upon one leg; and accordingly the pelvis, in this posture, is necessarily elevated above its natural level on that side, and depressed below it in a corresponding degree on the other. The consequence of this inclination at the basis of the spine is that the lumbar vertebræ which are next to the pelvis, and which form together the most flexible part of the spine, are also raised unequally in one direction and fall obliquely aside on the other. Hence, in order to preserve the equilibrium, a curvature of the spine takes place in the lumbar vertebræ, while standing upon one leg. 4th. There being this curvature formed at the base, it follows that the weight of the body falls more upon the concave side of the spine than upon the convex. But it has not been observed what are all the consequences which result from this. If we attend to the natural structure of the spine, it will be seen that whilst we lean the body to one side, the pressure is thrown, almost exclusively, upon the articulating processes of that side; these processes, delicate as they are, being the only bony structures which check the lateral movements of the trunk. Hence, when a habit is acquired of inclining to one side, or of resting upon one hip, as in sitting, the sharp edges of these small points of bone receive the weight of the entire body. But as the articulating processes are remarkably soft, and are imperfectly formed at the age of puberty, it follows that they will become wasted by absorption when this position is long persisted in; and an inequality of the length of these two lateral props, on which the vertebræ rest posteriorly, will be the consequence, those of the concave side being shorter than those of the convex. 5th. In lateral curvature of the spine we have a distinct demonstration that the articulating processes give way more extensively than any of the other parts of the column. This is evinced by the rotation which the spine makes in its perpendicular axis, at the same time that it inclines laterally. The joints of the articulating processes being situated posteriorly as well as laterally, the spinal column cannot yield in their direction, without wheeling partially round; and it is owing to this rotation that the transverse processes, and the ribs, are directed obliquely forward upon the concave side and obliquely backwards upon the convex side of the curvatures, thus giving rise to a fulness or swelling on the one hand, and a depression or sinking inwards on the other. 6th. When a curvature is established in the lumbar vertebræ, it is easy to understand that a second one must follow higher up, produced by the natural efforts of the body to correct the inclination thus formed at the base of the column. With a view to preserve the equilibrium, which is disturbed, in consequence of this curve, whenever the pelvis assumes the horizontal position, one of the shoulders is elevated and the head turned aside, causing a bend to take place in the dorsal region of the spine, in an opposite direction to that situated in the lumbar. 7th. If it be admitted, that in standing, we have a natural preference to use the right leg, as being the strongest and that with which the chief efforts are made in the powerful exertions of the limbs, we may comprehend how the curvature of the lumbar region of the spine is so frequently directed with its convexity on the left side of the body, and the curvature in the dorsal region, with its convexity on the right side. The former curve results from the pelvis being depressed on its left side, as a consequence of standing upon the right leg; this inclination of the pelvis throws the spine to the left side, making it bend to the right, in order to correct the want of balance. As this curvature in the loins becomes habitual, but can only be maintained while the pelvis continues oblique, the incurvation of the dorsal region must necessarily be to the left side, or in a direction opposite to the former.

"If it be admitted from the preceding observations, that rickets has no share in producing this variety of distortion which is so frequent in females, it is obvious to what an extent the number of cases must be abridged, in which the question as to the form of the pelvis becomes a source of anxiety during pregnancy. When the accoucheur meets with a true case of deformity of the spine from rickets, he will not, it is hoped, be deceived by the notion which at present too generally prevails, that it is a mere accidental circumstance whether the pelvis in this complaint be included or not in the distortion. He will reflect, on the contrary, that if this disease has attacked the osseous system, two causes have been in operation to diminish the size of the pelvis, and having a more correct knowledge of the different sources of the dangers in such cases, he will be prepared to meet them with greater promptitude." (P. 468.)

Dr. Lee's "*Description of the Appearances observed in a Case of Double Uterus, in which Impregnation had taken place, with Remarks on the Structure and Formation of the Membranes of the Human Ovum,*" we recommend to general perusal. We pass it by, in order to make room for Mr. Evans' "*Case in which a Cyst, containing Hydatids, was found in the substance of the Heart,*" and which, we fully agree with that gentleman, cannot "be uninteresting to the profession;" these morbid appearances being of such rare occurrence.

"The subject was an unmarried female, of about forty years of age, of slender make and weakly appearance, but who had generally enjoyed good health. During the last few years, however, she found her health somewhat decline; she was languid and indisposed to exertion, and was observed to be irritable. Since the beginning of last winter, especially, her strength failed, and she found that efforts which were formerly easy to her, were now performed with difficulty. This was particularly the case in walking up any rising ground, or mounting a staircase: such movements she avoided as much as possible in consequence, but, when she persisted in them, the result was extreme fatigue and shortness of breath.

"These symptoms increased, and added to them, she felt occasionally a sharp pain dart through the heart; it was momentary, but most intense, so as to cause her to remark, that 'it must be with such pains that people die suddenly.' As these sufferings, however, were transient, she did not pay much attention to them, but continued her usual occupation (of nurse) until the 20th of

April, when after running down stairs and up again rather quickly, she was seized with a violent paroxysm of dyspnœa, attended by throbbing and pain of the heart, which compelled her to go to bed, and from this moment she was never again able to leave it. She remarked to her companion, that she felt as if her heart had leapt from its place. The pain subsided a little by rest, but was followed by vomiting and purging to some extent. During the night, the effort of sitting up for the purpose of relieving the bowels, induced more than once a state of complete syncope, which lasted for some time.

"On the following morning, I saw her for the first time. She was much exhausted and felt very faint; the skin was bleached and the countenance sallow and sunken. The pulse was so rapid as to be countless; having the feel of a continued vibration of the vessel rather than of a pulse. The carotids and other large vessels also vibrated strongly. The motion of the heart was sudden, jerking, and violent, its force seemed to increase under the pressure of the hand; it was felt over a large extent of the chest, and below the sternum. The respiration was very hurried and laborious, and required a raised position of body for its performance in any degree of comfort. The pain in the chest had nearly subsided.

"By the ordinary means the diarrhœa was checked, but the sickness was rather obstinate. From this period until the time of the patient's death, there was but little variation in the symptoms. She felt constantly faint and gasping; the pulsation in the large vessels and heart became stronger, and the action of the latter was felt over a larger surface of the chest; the least exertion, even that of turning round in bed, produced great palpitation and dyspnœa; and occasionally, without any such cause, paroxysms of difficult breathing so severe as to threaten dissolution came on, and lasted for hours. Once or twice, just after such paroxysms had subsided, the pulse became for a few hours more distinct, and might almost be counted. There was little sleep, and that little was disturbed and unrefreshing. The urine was scanty, but the extremities did not swell. The legs were often affected with severe cramps. Her strength gradually failed, and on the 1st of June she died.

"The treatment was, of necessity, chiefly of the palliative kind, and but little effect was produced by it upon the disease. Once, the state of the symptoms permitting it, blood was taken from the region of the heart by leeches, and blisters afterwards applied: a slight and temporary benefit only was the result. The use of mercury combined with opium was pushed to the extent of affecting the gums: but this merely added a new source of sufferings, without relieving those already present. Large doses of opium and other anodynes had not much effect, either in alleviating the symptoms or producing sleep.

"The body was examined thirty-six hours after death. On removing the ribs, the heart had the appearance of being much larger than usual. The cavity of the pericardium contained about an ounce of fluid. The membrane was coated by a layer of coagulable lymph over a small extent of its front surface. The apex of the heart was lost in a considerable tumor, apparently an elongation of the heart itself, and covered on all sides by pericardium. The tumor fluctuated to the touch, and there was an appearance on its surface as of cells within. On opening the heart, this new growth was seen forming a round and considerable projection into the cavity of the right ventricle at its apex. It was smooth and polished, covered by the lining of the ventricle, and occupied about one fourth of its cavity. The tumor was globular, and about three inches in diameter. An opening being made into it from the interior, it was found to be a cyst, containing a number of hydatids, varying in size from that of a pea to that of a pigeon's egg, the interstices between them being filled up by a soft curd-like substance of a yellow colour. The hydatids were precisely of the same character as those usually found in the human liver. On the inner side the cyst was covered by the lining of the ventricle only; but exteriorly, the muscular substance of the heart, considerably thinned, lay between it and the pericardium: hence it appears that the disease had its origin in the muscular substance of the heart. The other parts of the organ were natural.

"The heart is preserved in the museum of St. Bartholomew's Hospital.

"Although hydatids are so commonly found in many parts of the body, it is very rarely that they are met with in the heart. The Transactions of this Society contain the particulars of a case in which 'a large hydatid was found in the muscular substance of the heart.' Andral mentions having seen these vesicles of the size of a nut in the heart of a patient who died at La Charité. I have not been able to find any other unequivocal instance of hydatids discovered in this viscus. The older writers, indeed, make mention of cysts in the heart, but their descriptions are too vague to enable us to identify such bodies with the true hydatid." (P. 507.)

We have been much pleased with this volume of the Transactions of the Medico-Chirurgical Society; as, indeed, our current remarks and extracts will prove; and having given our readers samples of part of its contents, we commit those essays which space has compelled us to pass with merely a nominal notice, to their attentive perusal.

An Essay on the Structure and Functions of the Skin; with Observations on the Agency of Atmospheric Vicissitudes, through the Medium of the Skin, in the Production of Affections of the Lungs, Liver, Stomach, Bowels, &c. By Wm. Wood, M.D., Member of the Royal College of Surgeons of London, and Physician to the Newport Dispensary.— 8vo. pp. 172. Maclachlan and Stewart, Edinburgh; Baldwin and Co., London.

We have read this volume, both the preface and the essay, and are much puzzled what account we shall render; what we shall exhibit as the fruit of our exertion, what evidence we shall give that our labour has not been bestowed in vain. "The Structure and Functions of the Skin," and "the Agency of Atmospheric Vicissitudes, through the medium of the Skin, in the production of affections of the Lungs, Liver, Stomach, Bowels, &c." are both theses of such ample scope that either, to be satisfactorily treated, might well claim more space than the 172 octavo pages, here including not only both, but much other matter, which we cannot but think rather irrelevant to the subject; for, notwithstanding the author's remonstrance, we do decide that the long episode, of about thirty pages, devoted to the inquiry "*as to the origin of mankind from one or from several pairs* is (to use the author's own half confession) *out of place in a treatise of this kind*," all contained in that excrescence which relates to the *Rete mucosum*, might have been condensed into a couple of short paragraphs; and perhaps even less would have sufficed, if a calculation be made from the half-dozen pages devoted to the main inquiry, out of which the digression springs, or rather which has been burdened with it.

Works destined both for popular and professional perusal, too often suit neither. To the public, minute details are tedious; to the physiologist, generalizations without them are unsatisfactory. And of this our author seems in part to have been aware; (oh! that his practice had been based upon this persuasion;) that he had kept to his "original intention of repeating the experiments of the best physiologists on the obscure parts of the actions of the skin;" for then we should have been indebted to him for a digest and verification, or refutation, of a mass of matter of unwieldy bulk. But when, on considering the great number of the experiments already made, the great weight, in many instances, of their authors, and the contradictory evidence furnished by them, (a circumstance which should have served as a stimulus,) he shrunk from the labour, and "was deterred from following out this course," and contented himself with reviewing what others had done and published before him, his object became one scarcely worth accomplishing; for there is but one way of satisfactorily "pointing out errors and discrepancies" in the books of men, and that is by reference to the book of nature.

In the chapters on the structure and functions of the Integuments, we find little either seriously to object to or commend; the matter is chiefly collected from works, many of them long before the public, and most of them well known to all. In some parts, however, our author (even in his collectanea,) is behind the age: his account of the structure of hair is altogether erroneous, being based upon imperfect observation, which have long since been superseded by more accurate researches.

In the second part of the volume, which is that chiefly addressed to the public, there will be found some good general hygeinic advice, particularly with regard to exercise and clothing, which the public would do well to follow: we shall make our extracts from this part alone.

"Walking is an excellent mode of exercise for the vigorous and light of weight, who are able to carry it to an extent sufficient to augment the activity of the skin, without which no exercise is of much avail. But to obtain this effect in the delicate or overgrown, such an exertion may be required as may prove hurtful; for them, riding is a preferable mode of exercise. From the earliest times, riding has been justly considered as particularly beneficial to people whose lungs are in a delicate state: Sydenham regarded it even as specific in pulmonary consumption. Now, though I cannot subscribe to Sydenham's opinion in its whole extent, I have always been very sanguine as to the benefits to be derived from this and other kinds of exercise in pulmonic complaints. And I am disposed to think, from facts that have come under my notice, that by adopting an early and judicious course of exercise, the health and strength of persons already affected with incipient phthisis, or in whom the disposition to that disease is strong, may be so improved as to enable their constitutions to ward off its advances until a maturer age shall weaken the phthisical tendency. But to be productive of any lasting benefit in such cases, exercise must be conducted on a well-arranged plan. When circumstances permit it, I know of none preferable to a six weeks' or two months' ramble, during the summer months, in some of the most picturesque parts of our own island. The preference should be given, I think, to a hilly or mountainous district, as there the air is generally purer, and the scenery more varied. This plan, besides the exercise taken under it, possesses many advantages over most other proposals for improving and strengthening a naturally feeble constitution. That a short residence on the sea-coast, during the season, is generally attended with benefit to the health, is well ascertained; but such benefit is not to be compared with that which results from the same space of time spent in journeying from place to place, by which a continual change of objects, novelty of scenery, and, what is still better, a daily change of atmosphere, are obtained for the invalid. As regards the effect of a few weeks' residence at some inland watering-place, it is, in the majority of instances of this kind, to say the least of it, so much time very unprofitably spent in respect to the acquisition of health." (P 153.)

We recommend the following to those metropolitan peripatetics we occasionally meet, book in hand, attempting to study in Holborn or Cheapside.

"Some part of the effect of simple exposure to a free atmosphere, is unquestionably due to its direct stimulant agency on the skin, but the greatest share must be dependent on the influence of a drier and purer air, to augment the energy of the respiration. One of the worst consequences, indeed, of a sedentary life, is the languor of respiration which usually accompanies it, owing partly to the defect of the stimulus of a pure and fresh air, both on the respiratory organs and on the skin, and partly to an impaired sensibility in the nervous system to the impression (on which the act of respiration depends) made by the presence of unoxygenized blood in the lungs, when the attention is exclusively occupied with one object for a long period of time. And with this last circumstance is connected the fact commonly remarked, that studious people derive little benefit from solitary exercise, such as a solitary walk; for if the mind be still occupied with an engrossing train of thought, the nervous energy is diverted into that channel, and the natural tendency, under exercise, to a freer and fuller respiration, is counteracted, and thus the beneficial effects of the exercise are lost. These few remarks will sufficiently indicate the general principles on which all other kinds of exercise are to be regulated." (P. 157.)

The following likewise deserves attention.

"*Clothing*. I proceed now to the consideration of Dress, a point deserving of equal attention in the management of the skin.

"On this subject, many erroneous ideas have prevailed; the most mischievous of which is the supposition that a hardihood of constitution can be acquired by a free exposure of the body, lightly covered, to all weathers. This error has its origin in the indisputable fact, that a delicacy of habit, and liability to disease from slight changes of temperature, grow up in those who confine themselves much within doors, and are seldom subjected to atmospheric vicissitudes. This delicate habit is as much the result of other concomitant circumstances as of the non-exposure to cold; nor, bad as this practice is, should the reverse of wrong be held the right here, any more than in most other cases. In robust people, in whom the skin and other functions are active, moderate cold, not long continued, makes but little evident impression, even when the clothing is light. The natural activity of the skin in them, and the vigorous re-action consequent in such constitutions on the application of cold, make them little susceptible of injury from it; yet even they seldom fail to suffer, if they attempt to carry the supposed hardening of the constitution to any considerable length. It is now a fact well ascertained, that it is not the continued exposure to cold which enables the inhabitants of the frigid zone to bear the intense cold of such a climate with impunity, but that they resist with ease the occasional exposure to such a cold, by living, while their avocations permit them, in well-warmed rooms, diminishing thus the usual expenditure at the surface, and husbanding the resources of animal temperature. It has even been observed, that the natives of southern climates have borne for a time an intensity of cold sufficient to overpower men who had been all their lives accustomed to considerable degrees of cold. And further, there is no remark more commonly made, than that the natives of the East and West Indies are not so susceptible of cold as ourselves, for the first, or even second winter of their residence in this country.

"It appears, then, that a hardening of the constitution is to be obtained, not by a continual but occasional exposure to cold, while, at other times, the expenditure of the animal warmth is carefully economised.

"In every country where the vicissitudes of temperature are great, the clothing ought to be such as renders the body, as far as possible, independent of such vicissitudes. In very cold climates, necessity commands the use of warm clothing, under the penalty of the immediate injury or inevitable destruction of the body. It is in such climates as our own, that errors as to dress are most prevalent, where the cold is seldom so intense as to force on us a fixed rule as to the warmth of our coverings, and where the range of temperature, while it tempts the incautious to prefer fashions to safety, is too often extended enough within a few hours, to derange the whole economy of the body, when exposed without defence to its vicissitudes.

"This, then, is the simple rule for the regulation of dress, to interpose, between the atmosphere and the surface, such an amount of some non-conductor of caloric, as shall preserve it from any sudden reduction of temperature, at the same time that the material employed does not interfere with the free passage of the natural watery excretion. For this purpose, woollens are especially adapted; silks, linens, and cottons, are inadequate to the complete protection of the body in a climate such as ours. Even in tropical countries, woollens are the safest materials for apparel, since sudden diminution of temperature is there also the fertile source of disease. Nor is woollen so oppressive, in the heat of the day, as at first sight it seems to be, since its non-conducting power serves equally to protect the body from external heat, as to save the escape of animal warmth, when cold prevails in the atmosphere. Or if the temperature of the atmosphere be seldom so high as to render woollen a protection from external warmth, its porousness at least, by favouring evaporation, tends to keep the surface cool and comfortably free from an accumulation of moisture. Since nothing is more oppressive, under great heat, than a load of clothes, the advantage of a diminution of weight results from wearing light outer coverings, while a sufficient protection is secured by the use of flannels or wrought worsted next the skin. Even in our climate, the use of light outer coverings, instead of our heavy broad cloths, would be preferable to the practice, too often hurtful, of throwing off our flannels in summer.* In some seasons throughout Britain, and in the southern and western counties in many seasons, the temperature is steady enough for several weeks to permit of this practice with general impunity, yet not without risk; but in the northern and eastern parts of the island, scarce a season passes without abundant proofs of the pernicious effects of leaving the body exposed to the insidious vicissitudes, which, in most days, occur within the twenty-four hours." (P. 158.)

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* "It is a common practice, with many who wear flannel, to throw it off during a part of the year, and sometimes even without substituting for it calico, or any under covering whatever; and that, too, at a time when they stand most in need of it: for it is spring and autumn that flannels afford the greatest protection, when the heat of the day is frequently considerable, while the evenings are cold and damp; and it is in these two seasons that acute diseases especially prevail. It is of much importance, then, that those who have accustomed themselves to an under covering of flannel, whether they be liable or not to rheumatic diseases or affections of the lungs, should consider seriously how great a risk they run in stripping themselves of such a safeguard."

BIBLIOGRAPHICAL NOTICES.

A Dictionary of Practical Medicine; comprising General Pathology, the Nature and Treatment of Diseases, Morbid Structures, and the Disorders especially incidental to Climates, to the Sex, and to the different Epochs of Life; with numerous Prescriptions for the Medicines recommended; a Classification of Diseases according to Pathological Principles; a copious Bibliography, with References; and an Appendix of approved Formulæ. The whole forming a Library of Pathology and Practical Medicine, and a Digest of Medical Literature. By JAMES COPLAND, M.D., Consulting Physician to Queen Charlotte's Lying-in Hospital; senior Physician to the Royal Infirmary for Diseases of Children, &c. Part I.—London: Longman.

NOTWITHSTANDING the great ability and immense industry displayed in this work, its very nature precludes the possibility of our entering into a detailed notice or analysis of its contents. We must, therefore, confine ourselves to a general but warm expression of our admiration for the manner in which Dr. Copland has executed a task, which very few would have had the courage even seriously to contemplate, and still fewer the capability of executing in so masterly a manner. We are aware of the great length of time which Dr. Copland has spent in the preparation of his materials for this work, and we are also aware, from some of his previous works, (we refer to that on Cholera particularly,) how skilfully and efficiently he can digest and throw into an instructive and useful form all the important parts of multifarious documents and conflicting evidence which may have been published upon any given subject; but embracing, as he does, in this Dictionary, the whole and vast range of medical knowledge and literature, we could scarcely have imagined that the labour of one man could have so completely succeeded in an undertaking which requires not merely a very unusual degree of skill in compiling from the labours of others, but great practical experience to guide him in the selection of his matter for each particular article. There is also another essential qualification for the performance of such a task, a succinct yet perspicuous style of writing; and here again we are gratified at Dr. Copland's success. In arranging numerous facts upon various subjects, which are intimately connected with each other, but which still must be given in an alphabetical division, more adroitness, information, and tact are required, than can be imagined by those who have never made the laborious attempt, to avoid an appearance of that

> ——Rudis indigestaque moles
> Quam dixêre chaos.

But, after carefully perusing the leading articles which are contained in this first part of the Dictionary, we only state our sincere opinion when we say, that the facts upon each subject are related with great order and distinction; the doctrine and practice of the best British and foreign writers are given; long-spun theories are very properly cut down to their merited brevity; and that of every subject a most impartial statement is given, for we never find Dr. Copland surrendering his "judgment hood-winked," to the fascination of great names.

COOPER's Dictionary of Surgery is known to all the profession, and we cannot bestow greater praise upon Dr. COPLAND than by saying that his work may fairly compete with it for the ability with which it is executed, and for the instruction it will afford to those students and practitioners who consult its pages.

In order to facilitate reference, as well as to avoid repetition, each article is methodically divided and headed, and the paragraphs numbered; and to each a copious bibliography, with references, is added. The remaining parts of the work will be published in a few months, and, when complete, the price will be extremely moderate. It is printed in double columns, in a small but very clear and legible type.

Principles and Illustrations of Morbid Anatomy, adapted to the Elements of M. ANDRAL, *and to the Cyclopædia of Practical Medicine, with which it will correspond in size: being a complete Series of coloured Lithographic Drawings, from Originals by the Author; with Descriptions and summary Allusions to Cases, Symptoms, Treatment, &c. Designed to constitute an Appendix to Works on the Practice of Physic, and to facilitate the Study of Morbid Anatomy in connexion with Symptoms.* By J. HOPE, M.D., F.R.S., Physician to the St. Marylebone Infirmary, &c.—London: Whittaker and Co.

THE general plan of this work appears to us to be very good; inasmuch as it contains not merely representations of various diseases, but also a succinct account of the nature of each instructive case, together with brief comments as to the connexion which existed between the lesion and the symptoms. Such is undoubtedly the most instructive, as well as the most attractive, mode of conducting the study of morbid anatomy: it is infinitely preferable to the system of giving plates, and descriptions of them, unaccompanied by some reference to the particular instances of disease they are meant to illustrate. As the first part only of the work is at present published, we must borrow from the preliminary observations of Dr. HOPE, in order that we may put our readers in possession of the plan of the work. The arrangement is according to organs, as being best adapted to the study of the diseases of organs; but the lesions of each organ are considered in reference to the particular tissues which they occupy on the principles of general anatomy. The descriptions are, for the most part, copies of those taken from the original specimens. Reference is made, when desirable, to the corresponding descriptions of other writers, with the exception of the Cyclopædia, the alphabetical form of this work affording every facility of reference.

With few exceptions, Dr. Hope has taken the histories of the cases personally, and, as we have before stated, he has, in order to render the work as practical as is compatible with its character, adverted to the nature of the most important cases, and to the connexion between the lesion and the symptoms. In order to render the illustrations as faithful as possible, Dr. Hope has taken the precaution of never drawing without the specimen before him; and, to obviate changes of colour from decomposition or exposure to air, he has usually completed the drawing within a few hours after the specimen was removed from the subject.

His first part consists of thirty figures, representing various diseases of the pulmonary parenchyma, and twenty-three pages of descriptive text.

We are so perfectly aware of the difficulties with which the most experienced limner has to contend, who is engaged in the colouring of plates of morbid anatomy, that we would not willingly be fastidious in our criticism. If we cannot conscientiously say that those before us leave nothing to be wished, that there is no room for improvement; we may, at least, truly state that their execution is highly respectable; and that, judging from the specimen of the work which has been published, it will, when complete, form a very useful work of reference to refresh the knowledge of those who have often seen diseased parts, and one of much instruction to students who have not had a similar advantage.

As physician to the Marylebone Infirmary, Dr. Hope enjoys peculiar facilities for enriching the science of morbid anatomy. From this source, Dr. HOOPER, his predecessor, principally formed one of the most select and most valuable museums in this country; and it must be a source of satisfaction that he is succeeded by one who wants neither talent nor industry to benefit himself personally, and the profession in general, by the fruits of the great practical field which he has now the opportunity of cultivating.

HOSPITAL REPORTS.

HÔTEL DIEU.

Paraplegia, arising without any obvious cause, and extending to the Superior Extremities, cured by the application of Moxas below the Cervical Region. By M. Dance. (*Archives Gen.*)

A mason, æt. twenty-two, strong and well formed, was admitted on the 5th October; he had been indisposed for fifteen days. He had slightly wounded himself on the ring finger of the left hand, in raising a stone, and on the following day he felt himself unwell and feverish. A slight eruption of pustulous pimples then appeared on the skin, of which, however, there were no traces when he entered the hospital. At the expiration of eight days, other and more serious symptoms arose, which could not be connected with the preceding. The inferior extremities, after a sensation of numbness being felt in them, became quite paralytic, and the trunk of the body was also similarly affected. The paralysis commenced in the right inferior extremity, and then extended to the left. Both sensation and motion were destroyed, the patient not being able to feel when he was pinched very hard. The limbs were free from pain, stiffness, or convulsive movements; and, when they were raised, they fell like lifeless masses. The same loss of sensibility existed over the whole surface of the abdomen. The bladder was distended with urine, and it was necessary to draw it off with the catheter. No evacuation from the bowels for six days. Respiration was carried on principally by the action of the diaphragm, and consequently there was a marked elevation of the abdomen at each inspiration, while the ribs remained motionless. The patient could not cough. His speech was not affected, and his intellect remained clear. The upper extremities soon became paralytic; the right being weaker than the left; neither could be completely raised from the side. The pulse was small, weak, and rather slow. Skin cold and mottled; expression of countenance natural; appetite moderate; nights disturbed.

For such symptoms no cause could be assigned from the information derived from the patient. He had had no fall; had suffered from no contusion nor violent efforts; nor had he been exposed to severe cold, which might have affected the spine. There was no pain along the vertebral column, either previous or subsequent to the symptoms of paralysis; neither motions of the body, percussion upon the spinous processes of the vertebræ, nor the application of a sponge soaked in hot water along the spine, produced any pain.—Sulphur baths were ordered; two grains of calomel; purgative clyster; broth diet. This treatment was continued for several days without advantage; the paralytic affection remained as before, and still without stiffness or pain. Respiration became very laborious, for want of the assistance of the pectoral muscles, and sometimes the patient complained of a sense of suffocation. Pulse continued feeble, small, and slow; skin cold; involuntary flow of urine; bowels never open without enemas. Various parts of the body, upon which he lay, were now very painful from excoriations and even partial sloughing.

On the 15th October two moxas were applied on the back of the neck at the lower part. Sulphur baths continued.

17th. There were some feeble signs of sensibility in the lower limbs, particularly the left; state of the pulse the same, and still incontinence of urine.

23d. Return of sensibility more decided, but no power of motion restored.

November 6th. Slight motions were perceived in the muscles of the inferior extremities, but still not sufficient to move the limbs; sensibility of all the parts now restored to its natural degree; urine only flows involuntarily during the night; and the elevation of the thorax proves that the muscles of that region begin to assist in the act of respiration. The wounds from the moxas were kept open by several peas.

14th. Still improving. The patient can now raise himself, and bend and extend his legs as if he were in perfect health, but he cannot get out of bed and stand upright. Excoriations beginning to heal.

Towards the end of the month the improvement was still greater, and on the 6th December the patient could walk about the ward with a stick. The 28th, he quitted the hospital perfectly cured. He said he felt able to walk several miles. He was advised to keep up the discharge from the moxas for some time.

The seat of the disease in the above case cannot be doubted, if we judge from the symptoms: they clearly indicated a deep-seated affection of the spinal marrow, for, excepting the diaphragm, all the organs under the influence of the spinal cord were completely paralysed. Even the heart seemed to be thus affected, from the weakness and slowness of its pulsations; and it may be observed, that this circumstance tends to confirm the results of the ingenious experiments of Legallois upon the spinal marrow, which were made for the purpose of demonstrating its influence upon the motions of the heart. But, although the seat of the disease may be strongly presumed, much doubt remains as to its precise nature. Had there been inflammation of the membranes or of the substance of the spinal marrow, or was there effusion in the spinal canal? The complete absence of pain in the direction of the spine; the total absence of rigidity, or of contraction or spasmodic movements in the paralysed parts; the absence of fever, and other signs of sympathetic irritation, appear to prove that there was compression upon the part rather than inflammation of it. But whatever was the nature of the disease, it appears evident that, but for the assistance of art, it would have terminated fatally; and the principal benefit was certainly owing to the use of the moxas, the employment of which, in such cases, has frequently been found of service.

UNIVERSITY HOSPITAL OF CLINICAL AND OPHTHALMIC SURGERY, BERLIN.

Cure of Aneurism of the Thyroid Gland, by Ligature of the two superior Thyroid Arteries.

This operation, although proposed at an earlier period, was firmly established on principle, and successfully performed in 1814 by P. von Walther. It was first performed in Berlin, in 1819, at my hospital. When the gland, as in some cases, must be removed, owing to its size impeding respiration, the operation for its total extirpation is rendered the more difficult and dangerous; and therefore the indications for putting Walther's method into practice should be sought after with the greater zeal: this method is peculiarly fitted for the removing of the aneurismal state of the gland, as is proved by the following case.

An officer of the Prussian army suffered, according to his own statement, during the last six years, but probably since his childhood, from an enlargement of the thyroid gland, which latterly rapidly increased in size, so as, from its great weight, &c., to render him wholly unfit for service. The pulsations of the thyroid arteries, which were considerably enlarged, could not only be felt, but seen distinctly; the surface of this soft, elastic, and uneven tumor was covered by numerous varicose veins of considerable size, and pulsation to a greater or less degree could be perceived by the least pressure on any part of the tumor. It extended from the superior margin of the thyroid cartilage down to the sternum, and its extent from side to side was such as to leave the mastoidea muscles uncovered only at the superior extremities: it protruded forwards to the same extent as the chin. The voice was greatly impaired, and much inconvenience to the head arose from it; even slightly sudden motions were attended with a painful difficulty of breathing.

Under these circumstances, my patient was determined to undergo whatever might diminish his sufferings; and accordingly I performed the operation on the 19th of July, 1831. I commenced the incision at about the anterior edge of that part of the mastoid muscle which corresponded with the superior thyroid artery, immediately over the tumor, and continued it about two inches backwards, dividing the skin and platysma together. Having separated the edges of the wound, I succeeded, with a blunt instrument, in exposing the trunk of the artery: it appeared to be three or four times larger than natural, and pulsated violently. On the application of the ligature, the pulsations of the artery ceased entirely, and those of the tumor were considerably diminished. The operation on the opposite side was performed in precisely the same manner: indeed, the pulsation did not cease to the same degree; but, after some minutes, a remarkable and a manifest flaccidity of the entire gland took place.

Both wounds healed by first intention, excepting, of course, the track of the ligatures. The ligature of the right side came away in eight days; that of the left in ten days. In proportion as the adhesive inflammation (*obliterende entründung*) extended itself from the parts operated upon to the gland, in the same ratio did the pulsation of the latter become more and more indistinct, and the circumference of the tumor, which itself felt firmer, was greatly lessened in extent.

On the eleventh day after the operation, arterial hemorrhage occurred, though the wound was scarcely so large as would admit a pea: the hemorrhage was of that kind which we see sometimes occur after operation for aneurism. It was stopped by pressure of the finger, and afterwards by a graduated compress applied by means of adhesive plaster; however, notwithstanding, it occurred periodically until the fourteenth day, five times. By means of the blood effused in the cellular tissue in and about the wound, a perfect cure ensued, and the patient was perfectly recovered on the fifth week. The tumor then had lost two thirds of its circumference, and pulsation had entirely ceased. The patient asserted that he was altogether free from every former inconvenience, and that he could wear the ordinary regimental collar without its causing, in any motion whatsoever, the slightest inconvenience; he therefore returned to his regiment at Magdeburg. A short time since (in February 1832,) eight months after the operation, I heard from him, relative to his continued enjoyment of good health.

In the only other case in which I performed this operation in 1819, its result is directly opposed to this latter case, the tumor having completely resisted the operation of tying the artery, and, from the extreme danger its extreme size caused to the life of the patient, it was necessary to remove it entirely. During the operation, the whole anterior side of the neck, with trachea and the right carotid artery was exposed: a portion of the gland was situated behind the larynx, and thirty-five arteries were obliged to be tied before the hemorrhage could be stopped. (See *Tractatus de Glandula Thyroidea*, &c., by A. Hedenus, Leipsic, 1822, p. 276.)

The cause of such different results should next be inquired into. In the first case, that of 1819, the aneurismal condition was manifestly present, but only, as I conceive, as accompanying the enlargement of the gland; the enlargement of the vessels progressed equally with the hypertrophy: whereas, in the latter case, the enlargement of the vessels evidently predominated, so that the enlargement of the affected organ was only conditional thereto. The thyroid arteries, in both cases, were enlarged, but those of the latter considerably more so, judging from their stronger pulsations, and also that the pulsations were distinctly to be seen. Without doubt the pointed out and symptomatically established differences account principally for the contrary results of the operations.

The difference in the manner of performing the operations might have certainly contributed somewhat to it.

In the first case I only tied the stronger pulsating artery of one side: in the latter, one on each side which caused a greater diminution in the supply of blood, and an inflammation of greater intensity and extent, owing to the additional incision and ligature.

ST. BARTHOLOMEW'S HOSPITAL.

Ptyalism, with extensive Swelling of the Tongue, from the use of Mercury.

Emma Lewis, æt. twenty-four, was admitted into Magdalene ward, under Mr. Lawrence, November 8th, with a discharge from the vagina, condylomatous swelling of the labia and thigh, attended with syphilitic ulceration of the tongue, and sore throat. She was ordered: ℞. Pil. Hydrarg. comp. nocte maneque s.; Extract. Sarsæ ℥ss. ter in dies adhibend. Lotio Zinci Sulphatis pro inject. in vaginam injiciend.

11. In consequence of pain in the head, twelve leeches were applied to the temples.—Sumat Pulv. Jalap. c. calomel.

12. Very little relief; mouth somewhat affected by the mercury; the right eye seems rather inflamed.—Rep. hirud. xij. ad tempora applicand.

13. The inflammation of the eye still remaining, with pain in the head; she was cupped on the right temple to sixteen ounces and ordered—Nitratis Argenti, gr. iv.; Aquæ distil. ℥j. M. ft. lotio; to be dropped into the eye. In this state she continued, the syphilitic disease of the labia and tongue having in a measure subsided, until the 12th, but in consequence of the great pain in the head, and inflamed appearance of the eye, she was ordered on

19. Emp. lyttæ inter scapulas.

20. C.c. ad ℥xx. nuchæ.

December 4. Hirud. xvj. around the eyebrow, in consequence of severe aching pain in that part, and on

10. Emplast. lyttæ ad nuch., and c.c. templo dextro. At this time there were no ostensible signs of mercurial affection.

12. She was ordered to take the following pill every eight hours: Submuriatis Hydrarg. gr. ij; Pulv. Opii, gr. ¼ m.

13. Inflammation of the right eye much the same, the left seems to partake of the affection.

14. The left eye inflamed and swollen; although she has taken but six of the pills, her mouth has become very sore, and salivation has taken place. Omit medicine.

15. The ptyalism is profuse; the tongue very much swollen, and projected from the mouth; the face tumid; the left eye very red and suffused with tears; she complains of constant pain in the head, with an aching, dragging sensation of the throat, consequent on the protruded tongue producing a tension of that part. In this condition the poor girl remained until the 2d of January, 1833. During this time it was found necessary to apply leeches twice to the eyelids, the left eye being then in a state of chemosis and very much swollen; and once to the tongue. She was also blistered, and had collyria of opium and argentum nitratum.

January 2. Mr. Lawrence, thinking to reduce the size of the tongue, which now presented a large round hard swelling, projecting from between the teeth, made an incision on either side. This occasioned great pain and aching of the part, which bled profusely, without affording any relief, or diminishing the size of the tongue. She passed a most distressing night, although she took five grains of the Pil. saponis c. opio. On the following morning Mr. Quin, house-surgeon, on examining the displaced organ, discovered that the tumefaction of the part, and the consequent pressure of the teeth above and below, had occasioned some ulceration, and also a strangulation, which, from the dry, black, and hard appearance it presented, led him to conclude would inevitably lead to sphacelation of the tongue, unless speedily relieved from its present constricted state. This he very judiciously endeavoured to effect by grasping the part with his hand, and gradually insinuating the tongue between the teeth, which were separated as much as possible; after some little time he succeeded in returning the whole of this immensely swollen organ to its natural situation in the mouth; having done this, he closed the jaws, and secured them in this position with a pasteboard splint and bandage.

4. Says she is "quite easy;" at first she experienced a great deal of pain after the tongue had been rescued from its perilous condition, but that as soon as it became moistened and warm, the swelling rapidly subsided. She can now articulate with facility, and take in nourishment, which beforehand she had found almost impracticable. Her eyes, especially the right, are very much improved; the left still is inflamed and sore, but looks a great deal better than it did some days since, when it presented almost a jelly-like appearance. The chemosis has disappeared.—Hyd. Nitrico Oxyd. gr. iss; Cerat. Cetacei, ʒi. M. to be smeared on the eyelids to prevent them sticking together, from the quantity of adhesive matter secreted by them.

8. Is better in all respects. The right eye seems quite restored to its natural state, and the left is only slightly inflamed; the tongue, although still sore from the incisions, has almost regained its normal condition. She expresses herself as very grateful to Mr. Quin for his exertions, to which alone she ascribes her present improved state.

This was one of those cases in which but a small quantity of mercury produced the most alarming effects. It clearly indicates the necessity that practitioners should ascertain the peculiar idiosyncrasies of their patients, previous to the administration of a drug, which sometimes, in its smallest doses, produces such deleterious consequences.—*Lancet.*

Case of Retention of Urine and great Tumefaction of the external Parts, produced by a Calculus, impacted in the Urethra of a Child.

John Jacques, a fine boy, aged four years, was brought to the hospital about nine o'clock on Friday morning, the 26th of October, and placed under the care of Mr. Earle: on his arrival, the whole scrotum and skin of the penis were found to be very œdematous, and much increased in size; the woman who accompanied him knew nothing further of the case than that the swelling had suddenly made its appearance early the same morning. Numerous scarifications were made with the point of a lancet, to relieve the excessive tension, after which, warm fomentations were continually applied. At two o'clock P.M., the tension had rather increased than diminished, notwithstanding that a considerable discharge of blood and serum had been kept up by the warm applications. On examination, no stricture of any kind, or other exciting cause, could be discovered; the affection was therefore attributed to irritation, produced by some acrid secretion under the prepuce, which was exceedingly œdematous, and in a state of phymosis. A weak solution of sulphate of zinc was ordered to be thrown up under the prepuce by means of a small India-rubber bottle.

At seven P.M., the boy having made no water since the morning, and the œdema having increased to a frightful extent, an attempt was made to pass into the bladder a very small elastic gum catheter, but without success: a slit about three fourths of an inch in length was then made in the upper part of the prepuce, but as the glans penis did not then make its appearance, some slight doubt arose as to the nature of a tumor, which resembled somewhat in shape and even in colour the glans penis in a state of disease: a slight puncture was made into it, but as nothing but pure blood oozed from the wound, no light was by this means thrown on the nature of the enlargement. The penis was again carefully examined, the œdema having somewhat diminished by the bleeding, &c.: a slight irregularity was discovered by pressing firmly the penis between the finger and thumb, at about three quarters of an inch from the pubis; and as this was the only irregularity felt, it was presumed to be the glans. The director was again inserted under the prepuce, and the incision continued to this point, when the tip of a small calculus was discovered at the orifice of the urethra, which was removed without much difficulty. In shape, the stone is a long square, about the third of an inch in length, a quarter in width, and too lines in thickness; one extremity forms a kind of wedge-shaped head, the very tip of which was the only part discoverable at the orifice of the urethra. A small elastic gum catheter was immediately introduced into the bladder, when about sixteen ounces of urine were drawn off: some further scarifications were then made in the prepuce and scrotum; a hip bath was ordered to be used immediately; and the parts to be enveloped in a bread and water poultice during the night.

27th. A considerable quantity of water is stated by the sister to have dribbled away during the night; and the boy appears to be doing well.

29th. Yesterday a small dose of castor oil was given. The water is made freely, but still in the bed. The belly this morning appears distended, but no external examination can give an exact idea of the state of the bladder, as the boy cries immediately on turning down the bed-clothes. The catheter has been introduced into the bladder, which was found to be empty. The scrotum is still swollen and much inflamed.—Ordered a hip bath, and to continue the poultices.

30th. The scrotum still inflamed; has not passed much water during the night; the catheter was again introduced, and a large quantity of highly-coloured urine drawn off.—Repeat the bath and poultices.

31st. A considerable quantity of matter had formed around the root of the penis, which has been let out by a free incision: a large arterial branch was wounded, which required to be tied.

Nov. 2d. Another incision was made to-day on the opposite side of the root of the penis, as there was still a small collection of matter. The boy is rather blanched and weak.—Ordered to have meat diet, and a little beer.

6th. Since the 2d, no unfavorable symptoms have appeared; the boy now makes his water freely into a vessel, and none escapes through either of the wounds; in the urine there is a considerable deposit.

Fear was for some time entertained from the suppuration in the cellular tissue of the scrotum, that ulceration of the urethra, and consequent effusion of urine, had taken place, from the irritation caused by the passage of the stone, and the introduction of the instruments; but the mischief has been so limited, that all fear on this head is dissipated, and especially as no water has passed through either of the wounds.

This case shows of how much importance it is to investigate minutely every case as soon as it presents itself to our notice, and of what value may be the statement of the friends, should the patient from age, the disease itself, or any other cause, be incapable of answering rationally those questions which it is necessary to put to him. Had the mother fortunately accompanied this little patient to the hospital, and given the subjoined statement, which she made the following Sunday morning, no doubt could have been entertained of the propriety of at once having recourse to those means which were resorted to ten hours afterwards, and thus the patient would have been saved much unnecessary pain and suffering, and the risk of his life.

The mother stated that on Thursday morning, (the morning previous to the boy's being brought to the hospital,) immediately after going to stool, he ran in, crying, and saying that "he had run a nail in.' As no wound was discovered, she thought nothing more of it, although he complained more or less of a pricking sensation during the rest of the day. The following morning, about six o'clock, on again going to stool, he again returned with the same exclamation: on examination the parts were discovered to be slightly swollen. The swelling increased very rapidly, as at nine o'clock he was brought to the hospital in the state above described. —*Med. Gazette.*

COLLECTANEA.

Floriferis ut apes in saltibus omnia libant,
Omnia nos, itidem, depascimur aurea dicta.

PATHOLOGY.

Is it possible to give rise to the Matter of Tubercle, at least locally, by direct Inoculation? I AM acquainted with only one fact that bears on this point; and, although I am aware that little stress can be laid on a single instance, I think it as well to notice it in this place. About twenty years since, while examining some vertebræ containing tubercles, I grazed slightly the forefinger of the left hand, by a stroke of the saw. The scratch was so small that I paid no attention to it; but on the following day it was slightly inflamed, and there gradually formed in it, and almost without pain, a small roundish tumor, apparently confined to the skin, and which, at the end of eight days, was of the size of a large cherrystone. At this period the epidermis cracked, and showed us the small tumor within, which was yellowish and firm, and in every respect like a crude yellow tubercle. I cauterized it with the deliquescent hydrochlorate of antimony, and felt no pain from its operation. At the end of a few minutes, however, after the fluid had penetrated the whole substance of the tumor, I detached it by a gentle pressure. The caustic had softened it, and made it exactly like a soft friable tubercle. The walls of the cavity which had contained this body were of a pearl gray colour, slightly semitransparent, and without any redness. I applied the caustic afresh to these. The part soon healed, and I have since found no further effects from the accident.—Forbes' *Translation of* Laennec *on Diseases of the Chest.*

Frequency of Diarrhœa and Ulceration of the Intestines in Phthisis. Out of 112 cases of phthisis, diarrhœa was wanting in one only. In some it preceded any sign of phthisis pulmonalis; in about one eighth, it began at the same time as the disease of the lungs, and attended its whole course, from five to twelve months, and even, in some cases, during the greater part of four or five years; in the majority of cases, it began in the latter half of the existence of phthisis; and in one fourth, it appeared only between the fiftieth and twentieth day preceding death. In these cases, which may be called *the diarrhœa of the latter days*, the intestines were found diseased in every case but one; in one half, there was ulceration of the mucous membrane either of the small or large intestines, or both, and in every case but three the ulcers were small and rare; in four fifths of the cases, the mucous membrane of the colon was reduced to a soft pulp, and was almost always more or less red. The diarrhœa was proportioned to the extent of the organic lesion, and was greater when the membrane was softened than when it was simply ulcerated. *The diarrhœa of long standing* was either remittent or continued. In the former kind, which was observed in fifteen cases, the lesions were the same as in the variety just described, being comparatively slight. The diarrhœa continued from forty-eight days to five months, and the remissions lasted eight, ten, fifteen, or twenty days. The continued diarrhœa of long standing lasted from one to twelve months. Out of forty-one cases, the small intestines were ulcerated in thirty-five; the large, in thirty-one; in twelve cases, the small intestines were ulcerated through their whole course, and in thirteen, the ulcers were as large as an inch in diameter; in nineteen cases, there were large ulcerations in the great intestines; in thirty, the mucous membrane of these was of a pulpy softness, and in seventeen, it was red. As a general rule, it was found that, when a diarrhœa had been of long standing and continued, the ulcers were large and numerous. The diarrhœa was found to be as severe when the ulcers were in the small as when they were in the large intestines; but the much greater frequency of softening of the membrane of the latter (which appears to be the consequence of inflammation,) proves that the site of this symptom is much more commonly in the large than in the small intestines. In every case where there was much ulceration, the dirrrhœa was not only of long duration and continued, but the stools were also frequent, and the loss of strength and the emaciation were always proportioned to the number and frequency of the stools. There appears to be no foundation for the common opinion of diarrhœa alternating with the sweating in phthisis, or the one being supplementary of the other.—*Ibid.*

PRACTICAL MEDICINE.

Strychnine in Paralysis. Dr. TURNBULL, in his report of the Huddersfield Infirmary, published in the last number of the Edinburgh Medical and Surgical Journal, states that he has given strychnine in many cases of paralysis, but without any benefit when the malady has been of any duration. He adds, very truly, that, when it is exhibited in recent cases, it is difficult to decide whether it has any, and what, share in producing amendment.

PRACTICAL SURGERY.

A new Method of stopping Hemorrhage from Wounds. [From a Correspondent.] HITHERTO we have only known either mechanical or chemical means for arresting such hemorrhages. It appears, on the contrary, that, by BINELLI's method of treatment, which we recommend to the notice of our contemporaries, there is exercised upon injured blood-vessels, and upon the blood issuing from them, a nearly indirect tonic (*unmittelbar dynamischer*) influence; by means of which, hemorrhages are stopped without ligature or compression of any sort, without the use of the known conglutinations, astringents, or caustics, and does not cause any of those changes of the wounded vessel which we generally see arise after the application of the ligature or of powerful chemical caustics. The means discovered by Dr. Fidele Binelli for effecting this purpose is a clear and perfectly transparent water, almost tasteless, having a slightly empyreumatic odour, in which the senses cannot perceive any distinct chemical agent; namely, neither an earth, a salt, an alkali, an acid, nor a metal. The first public trials, to prove the efficacy of this water in arresting hemorrhage, were instituted in Turin, in 1797, by order of the government; the results of which were considered favorable. Soon after, Binelli died, and the secret for making this water also perished. In the years 1829 and 1830, the successors of Binelli affirmed that they had again discovered this secret, and new trials were instituted, at which I was prevented from being present by an accident which occurred to me during my trials in Italy that year.

The information I received respecting the results of those experiments was highly favorable; rather too much so, in order that I should place implicit confidence in them. I returned to Berlin, taking with me a small quantity of the "aqua Binelli," and waited patiently for a suitable opportunity to put it to the test of experience, which was accidentally afforded me in the form of a small unimportant wound, followed by a slight hemorrhage. I was so surprised at the effects of this water, when applied to the wound, that I requested my friend Dr. KARPER, an Italian physician, to send me, through the Prussian ambassador residing at Turin, a considerable quantity of the "aqua Binelli," in order that I might be enabled to make further experiments. When I obtained it, I was enabled to make other trials; the results of which are detailed in the following compressed notice.

In the first place, I tried its effects upon wounds of the larger blood-vessels of animals. I exposed various blood-vessels of young cats: in one, the femoral artery; of another, the same, with its accompanying vein; of another, the carotid artery; and, lastly, the same, with the internal jugular veins. These were cut differently, some longitudinally, some obliquely, some transversely, and others completely across.[*] The violent hemorrhage hereby induced yielded, without exception, and without any other means being employed, so soon as a charpie or lint, steeped in the "aqua Binelli," was applied and pressed moderately against the wound for five or ten minutes. Encouraged by this success, I selected larger animals for the same experiments, such as dogs and sheep, at which Professor Rudolphi, Dr. Schulz, physician general, Drs. Urebel, Büttnerr, Bahn, and Mr. Halbach, veterinary surgeon in chief, and many others, were present. The results from the latter were as favorable as those from the former: neither injurious inflammation, nor any other prejudicial reaction of the constitution, were remarked; the cicatrization of the wounds proceeded regularly, and all the animals experimented upon perfectly recovered.

Further encouraged, we determined on trying its effects upon man: 1st, (before the assembled class, in the operating theatre,) after amputation of a finger, where the two digital arteries emitted blood very freely. 2d. In a case of a wound of the hand, caused by a cutting instrument, which entered deep between the metatarsal bones of the thumb and indicator finger, and where the hemorrhage could not be arrested by means of compression or the tourniquet, without the fear of causiug gangrene. 3dly. After the extirpation of a hardened inguinal gland, from which a parenchymatous hemorrhage ensued. 4thly. After amputation of the thigh, on account of a scrofulous knee-joint: after the operation, the blood issued with great force, on the least relaxation of the tourniquet, from the crural, perforating, and other muscular arteries, also from the vein. In each case the hemorrhage was quickly and permanently arrested by the "aqua Binelli," without any other aid, and did not cause the least pain on its application, nor produced any discoloration on the surface of the wound; neither eschar nor any other local or general disagreeable effect.

The apparent, remarkable, and quite peculiar effect of the water merits all our attention, as an important object of the healing art may thereby be obtained. Our experiments excited a very lively interest, particularly so as we had not hitherto succeeded in our investigations as to the composition of this water. When all my efforts to discover its composition by various chemical reagents were fruitless, I requested experienced analytical chemists to undertake a more searching investigation of it. Drs. LINDES and RUNCE, professors of chemistry, Mr. KLEIST, chief apothecary, and some others, notwithstanding all their efforts, came to the conclusion that, by chemical analysis, neither alkali, salt, acid, nor a metal, can be discovered in the "aqua Binelli." Whether hereafter the celebrated BERZELIUS, and other chemists, to whom some of the water has been sent, will succeed in discovering its composition,[†] remains to be determined.

I have received, from various places, waters possessing an empyreuma, and corresponding in external appearances with the "aqua Binelli," but which, when tried on animals, proved wholly inefficacious.

With respect to the most essential organic changes observed after the employment of this water, I shall for the present only communicate the appearances presented on two post-mortem examinations. The above-mentioned case of amputation afforded the first opportunity, having died the tenth day after the operation. (This patient entered the hospital suffering under violent hectic fever, caused by phthisis ulcerosa pulmonum, and profuse suppuration from a fistulous opening at the knee-joint: the operation was only performed at the extreme and urgent solicitations of the patient himself.) The second was the carotid artery of a horse, which was cut in the direction of its axis, by Dr. HERTWIG, and cured by the "aqua Binelli:" the horse was killed fifteen days after the experiment.

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[*] It is proper to state, however, that we have seen the femoral artery of a dog entirely divided with a sharp bistoury, and very trifling hemorrhage followed, although *no means whatever* were had recourse to, to restrain the hemorrhage. In two days the animal appeared in perfect health and strength.—EDITORS.

[†] Berzelius has failed.

A lithographic drawing is attached to the annual report, representing the stump, with the artery and two veins (femoral and saphena) laid open for some inches of their length. The extremity of the artery is perfectly closed by a thrombus, which is cone-shaped and three inches long. A similar, but much shorter coagulum was found in the femoral vein, its cone, or upper extremity, only reaching the nearest valve; from which point another thrombus arose, many inches in length, having its cone at this valve, and its larger extremity towards the heart. The thrombus formed in the saphena vein was similar to that of the artery in every respect. The parietes of the vessels were neither thickened, swollen, nor, on their external side, enclosed by coagulated lymph, as PEROT has observed to be generally the case after the obliteration of arteries by ligature. The internal side of the vessels only differed from the normal state by presenting delicate transverse bands, like folds, which were particularly distinct in the artery, and extended somewhat higher than the upper extremity of the coagulum.

A section of the artery of the horse is also represented, showing a coagulum which completely fills the artery to the same extent as the original longitudinal section, thereby closing the wound, and terminating, cone-shaped, at either extremity, above and below the wound.

We refrain from laying before our readers further information at present upon this subject, until all the analyses undertaken to discover the composition of the "aqua Binelli" shall be completed, and a greater number of comparative clinical observations shall be collected.

MISCELLANEOUS.

Singular Cases of Hereditary Deformity; communicated by M. VOISIN. —*Gazette Medicale*, No. 119.

CASE I. Madame Dartijas has had twelve children, nine boys and three girls, and two miscarriages. One of the boys (Louis) has a supernumerary toe on the left foot, situated between the fourth and fifth metatarsal bones; it has two phalanges, and appears to adhere by ligaments only. Another brother (Pierre) has six toes on each foot. The eldest brother (Jean Baptiste) is married, and has had six children; the last has a supernumerary finger at the extremity of the first metacarpal bone of the left hand. One of the sisters (Marie) had an additional finger on the left hand, but, as it was attached by a very slight pedicle, it was removed when she was an infant. Lastly, a sister of Madame Dartijas married, and had eight children; and one of her sons has also a supernumerary finger on the left hand.

CASE II. In a family residing at Limoges, a remarkable peculiarity has continued for five or six generations. The eldest male child *alone* has, upon his forehead, a lock of white hair. In the female children no such appearance has ever existed. This inexplicable hereditary phenomenon occurs in every male branch of the family.

CASE III. This case and the last were communicated to M. VOISIN by his colleague, M. CHASTAING. A lady of his acquaintance had a severe whitlow which produced a deformity of her index finger; and a similar deformity was transmitted to her two children. She had had other children before, but in neither of them did any such peculiarity exist.

However inexplicable the above curious facts may be, we are not at all inclined to doubt their authenticity. Two similar cases of hereditary deformity have fallen under our own observation, which we may briefly relate.

Case I. A lady and her two daughters are now residing in Upper Berkeley street, Portman square. The youngest daughter has a band of perfectly white hair in front, which looks like a broad white ribbon when laid flat round the head: the rest of her hair is black. This peculiarity has existed in one female of several branches of the family for six or seven generations.

Case II. About sixteen years ago, Mr. North attended a young female during her confinement, who had been the *chère amie* of a banker well known in London. This gentleman has a supernumerary finger on the left hand, and a supernumerary toe on the right foot. Very fortunately for the lady and the infant, the latter bore upon its left hand and foot very striking proofs of its paternal origin, for it had the additional finger and toe. The gentleman no longer doubted the constancy of his mistress, of which he had before been somewhat suspicious, and the child was well educated, and is now in a respectable business.*

We learn, from the Medical Gazette, that there is now in St. George's Hospital, a patient in whom the patellæ are entirely wanting. The knee looks rather flatter than usual, but no apparent evil results from this anomalous formation, as the man says he can walk many miles a day without difficulty. The peculiarity is hereditary, neither his grandfather nor father having had patellæ; and it also extends to other members of his family.

Proportions of Alcohol obtained by Mr. Brande *from different Spirituous Liquors and Wines.*

	Proportion of Alcohol per cent. by measure.		Proportion of Alcohol per cent. by measure.
Scotch Whisky	54.32	Claret, highest	17.11
Irish Whisky	53.90	lowest	12.91
Rum	53.68	average	15.10
Brandy	53.39	Burgundy	14.57
Hollands	51.60	Champagne, still	13.80
Lissa Wine	24.41	sparkling	12.80
Port, highest	25.83	Hock	12.08
lowest	19.24	Gooseberry Wine	11.34
average	22.97	Tokay	9.88
Madeira, average	22.27	Cider	7.54
Cape Madeira	20.51	Perry	7.20
Currant Wine	20.55	Ale (Burton)	8.88
Sherry, highest	19.81	(Edinburgh)	6.20
lowest	18.25	(Dorchester)	5.56
average	19.17	London Porter	4.20
Teneriffe	19.79	Small Beer	1.28

Atomic Theory. From the sixth edition of Murray's *System of Materia Medica and Pharmacy.*

It is not attempted here to give any outline of the atomic theory, that important doctrine, the influence of which extends through the whole of chemistry, and regulates all the details regarding the combinations of bodies. It may be merely stated, that the leading principle of this doctrine is, that every substance has a certain combining proportion, in which only it will unite with other bodies. Thus, to take the instances of the three simple substances, *hydrogen*, *carbon*, and *oxygen*, the combining weights of these bodies are as the numbers 1, 6, and 8: that is, hydrogen combines with carbon in the proportion of one part of hydrogen with six parts of carbon; hydrogen combines with oxygen in the proportion of one part of hydrogen to eight parts of oxygen; and carbon combines with oxygen in the proportion of six parts of the former to eight parts of the latter; or, in the compound of hydrogen and carbon, there will always be six parts by weight of carbon to one part by weight of hydrogen; in the compound of carbon and oxygen, there are always six parts by weight of the former to eight parts of the latter; and in the compound of oxygen and hydrogen, there are eight parts of oxygen to one part of hydrogen. All simple bodies, in like manner, have certain invariable and peculiar combining weights. The reason of this singular law is supposed to be, that chemical combination happens between the atoms, or ultimate particles of bodies, and that the atoms of each body are of a specific size and weight: that is, recurring to the instances which have been given, au atom of carbon is six times the size and weight of an atom of hydrogen, and an atom of oxygen eight times the size and weight of an atom of hydrogen. It is to illustrate this view that the table of the atomic weights of bodies at the commencement of this work is constructed. The atoms of the different simple bodies, which, either in their simple state or in a state of combination, are employed in medicine, are represented of their specific magnitudes in relation to each other, and as denoted by the attached numbers. By the mere inspection of this table, the composition of any compound used in medicine may be determined: thus, if we wish to know the composition of oxide of iron, we observe that the equivalent of oxygen is 8, and that of iron 28; hence, oxide of iron must consist of eight parts of oxygen and 28 parts of iron; adding these together, the sum 36 becomes the equivalent of oxide of iron, and, in any combination of it with an acid, the proportion of the oxide of iron will be as 36 to the equivalent number of the acid. In this simple manner is the whole system of chemical combinations derived from a few numbers.

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* In the estimation of the public, no doubt whatever would be entertained as to who was the father of the child. Even with *such* evidence, however, physiologists might still be sceptical. Vide Mayo's Physiology, 2d edition, p. 489.—Editors.

Average Mortality of Europeans.

Average mortality in	England and Wales, is....	1 in 60
	France	1 in 40
	Sweden and Holland	1 in 48
	Russia	1 in 41
	Austria	1 in 38
	Prussia and Naples	1 in 35
	Leghorn	1 in 35
	Switzerland	1 in 49
	Rome	1 in 25
	Palermo	1 in 31
	Madrid	1 in 29.

It is said that, in France, about one half the population live to twenty years, and a third to forty-five; the lowest mortality is at the age of ten, being 1 in 180, while at the age of forty it is 1 in 53; the duration of life at fifty is 23 years, and twelve years longer among the rich than the poor. Since the late peace, the governments of Europe have paid great attention to statistics, and we have now returns from all parts of the continent, by which it appears that the mortality of Great Britain, her cities, and her hospitals, is greatly inferior to that of any other country in the old world, and that this nation is the most healthful of all.—*Med. and Surg. Journal.*

DIETETICS.

Portable Milk. M. Dirchoff, the Russian chemist, who some time since discovered the process of making starch into sugar, has lately made several experiments upon milk: the result which he has arrived at is curious. He is said to have found a mode of keeping milk for use for any definite space of time. The process of preserving is this: he causes new milk to be evaporated over a slow fire, until it is reduced to a powder. This powder is then put into a bottle, which is hermetically sealed. When the milk is wanted for use, it is only to dissolve some of the powder in a seasonable quantity of water, and the mixture so dissolved will have all the qualities, as well as the taste, of milk. —*Edinburgh Agricultural Journal.*

ZOOLOGY.

Marvellous Multiplication of the Infusoria. I have also made some observations on the development and multiplication of the Infusoria, which I deem among the most important of all my researches. I have observed for eighteen days successively a single Hydatina senta, and as it was perfectly grown when I singled it out, and did not die of old age, being accidentally destroyed, the life of this animal must be more than twenty days. Such an individual, when circumstances are favorable, is capable of a fourfold propagation every twenty-four—thirty hours. It can in this time bring forwards four eggs from the embryo state to the exclusion of the young. But this fourfold increase in the space of a day, when no obstacle intervenes, and the same individual gives, in ten days, forty eggs, and raised to the tenth power (therefore on the tenth day) a million of individuals from one mother; and on the eleventh day four, on the twelfth sixteen, millions, &c. Although this productive power is the greatest which has been yet observed in nature, far exceeding that of insects, it is far from attaining that of the Polygastrica. In the Paramœcium aurelia, which is $\frac{1}{12}'''$ in size, and which has been ascertained to live several days, a doubling of each individual by transverse division has been observed within twenty-four hours, its rate of increase is therefore double that of the preceding. But as these animals, besides division, also propagate by eggs, and these eggs are not separated from the parent singly but in masses, and as they also form gems, the possible increase within forty-eight hours becomes quite innumerable. Who can wonder that, under such circumstances, fluids should, with the brood of two or three days only, swarm with these animalcules?—*Edinburgh New Philosophical Journal; from a Paper by* Prof. C. G. EHRENBERG, *of Berlin.*

FOSSIL BOTANY.

On the Fossil Flora. The fact that we do not know more than a few hundred species of fossil plants, shows the impossibility of our pretending at present to form any very plausible estimate or conception of the nature of the antediluvian flora, and also the hazard of attempting, from the disappearance of a few species, in proceeding from one formation to another, to determine the abundance or paucity of families or classes of plants. It is surprising to observe naturalists characterising botanically whole antediluvian epochs, when they possess, as in the case, for example, of the second epoch, the period of formation of the new red sandstone, a group of twenty miserable remains, as the whole of the disposable riches from which such a result is obtained. It is evident also that we cannot, from the present fossil vegetable remains of single families, form any satisfactory inference as to the number of their species, because it may have depended in part on accident, or some unknown circumstances, that in one family many species and individuals are preserved, while in another but few remains are met with. In other cases the circumstances, although easily understood, are not attended to, and the number of fossil species found in the deposit are considered as the full measure of what has been destroyed. Thus, in the first epoch, two mosses only, but sixty-four lycopodiæ, are enumerated; but this circumstance does not prove that mosses and lycopodiæ formerly existed in the proportion of two to sixty-four, for it is very natural that gigantic lycopodium stems would more easily resist the storms of time than the dwarf moss; and although we, on that account, have only two mosses remaining from that period, it does not follow that they have not been more than ten times more numerous than the lycopodia.

It is doubtful if botanists can determine with accuracy even the family of the fossil species. Many of the remains at present considered as Lycopodiums, may prove to be Ferns, or even Pines, the Selaginites excepted. Many of the gigantic, so called Equiseta, resemble tree-like grasses. The Marsileaceæ of the former world may have belonged to the ferns. The Voltzia has not yet been proved to belong to the Coniferæ, and as the confirmation of the coniferous character will give a decided preponderance to this class of plants, in the period in which it occurs, we see from this example how uncertain single conclusions are, which have been considered as sufficient in regard to the prevailing character of many vegetable epochs. An error, which can be so easily committed, in endeavouring to determine fragments very difficult of determination, is doubly prejudicial, when we attempt to found on it a history of the gradual succession of the families of plants. The whole study of the ancient flora, the flora of an early world, is based on such a system of the history of vegetation, and on the proofs that it rises gradually from below upwards in regular successive epochs of more and more perfect vegetables. But in order to judge of this history of vegetation, it is premised that we have previously ascertained the true succession, the internal gradation of vegetation, in short, the true natural vegetable system. But who has discovered this system, and what are its characters?—*Edinburgh New Philosophical Journal.*

INTELLIGENCE.

For the following account of the case of the so-called "Lavinia or Eliza Edwards," which has lately excited so much attention, we are indebted to Mr. A. S. Taylor.

During the last month, a case has occurred of a somewhat novel nature in the annals of imposture, which has greatly excited the curiosity both of the public and of the profession: on this account, its details may not prove uninteresting to the readers of the London Medical and Physical Journal.

It appears that, a short time since, the body of an individual, professing to be that of a female of the name of Eliza Edwards, was sent to the workhouse of St. Margaret's, Westminster, for interment. It was brought from a low brothel in the neighbourhood; but no particular history was given of the deceased, and the body, being considered among the "unclaimed" of the parish, was, by order of the inspector for London, sent to Guy's Hospital for dissection. The certificate represented it to be that of a female, and it was received by the keeper of the dissecting room as such; but, a few hours after its admission, it was discovered to be that of the body of a full-grown male. Notice was given, as speedily as possible, to the authorities of the parish of St. Margaret's, in order to rectify any supposed mistake; and, in the mean time, no prohibition existing to the contrary, the dissection was continued by those gentlemen to whom the body was assigned.

An order was afterwards issued by the inspector for its removal, and an inquest was held on the body, in consequence of some suspicion being raised respecting the real cause of the death of this individual. Many extraordinary particulars regarding the life and habits of the deceased now came to light. It appeared that he had first assumed female attire about the age of fourteen; and, having chosen a theatrical life, he represented female characters on the stage, first in Paris, and subsequently in the theatres of many of the great provincial towns of England. No suspicion seems to have arisen respecting his sex, and he passed off with the public as a female. There is no doubt that many were acquainted with the real history of this impostor, but the secret seems to have been maintained most inviolably: indeed, it was only in consequence of some letters having been accidentally found in his bedroom, after death, that so much of his history has become known to the public.

A short time previously to his death, he had been attended by a physician for disease of the lungs, and so accurately was the imposition maintained that his medical attendant did not entertain a suspicion of the real sex of his patient. He had been sent as a female, when dead, by the parties with whom he lived, to the workhouse; he had been there received as such, and his body afterwards conveyed to the hospital, where the imposture was first detected. These facts have led many to believe that it was a case of sexual ambiguity; but, so far from this, a simple inspection of the exterior of the body would have sufficed to remove all doubts upon the subject. The features were somewhat of a feminine character; the hair was long, and, like that of a female, parted in the middle of the forehead. These were the only points in which any resemblance to the other sex could be traced. A great part of the beard and whiskers had evidently been plucked out, and the hair which grew under the chin had been dexterously concealed by the peculiar head-dress which he wore during life. The deceased was about twenty-four years of age at the time of death; and it appears that his voice had been remarked, by several witnesses, to be hoarse and peculiar, though not unlike that of many females at the middle period of life.

On the 24th January I was called upon officially to examine the body of the deceased, in order to ascertain the cause of death. With the exception of the appearances already described, it had every character of that of a full-grown male. There were no mammæ, the male sexual organs were perfectly developed, and the lower extremities exhibited those prominences of the muscles and bones characteristic of the male sex. The upper extremities were somewhat slender and tapering; and the hands had evidently been unused to hard manual labour. Having laid open the thorax, the lungs were found considerably diseased, and adhering to the internal parietes of that cavity; they felt hard and tuberculated, and, upon making a section through each, it presented a series of small abscesses, filled with matter. There was scarcely a portion of the organs which could be termed healthy. The pericardium contained a larger quantity of serous fluid than usual; but the heart was free from any appearance of disease, although somewhat large.

Upon opening the abdomen, the liver was found greatly enlarged, of a pale nutmeg colour, and presenting the appearance commonly observed in the bodies of individuals who have been addicted to the use of spirituous liquors. The stomach was distended with about a pint of fluid, presenting nothing remarkable in smell or colour: its coats, both internally and externally, were healthy. No trace of inflammation could be perceived in any part of the alimentary canal, nor was there any poison to be discovered in the fluid contents of the viscera. Indeed, the suspicion of poisoning was clearly negatived by the history of the symptoms immediately preceding the death of the deceased; and by the fact of his having been attended to the last by a physician who prescribed for him and watched the progress of his case. The other viscera of the abdomen were found in a healthy state; the internal organs of generation were perfect, and the contents of the pelvis presented no ambiguity either in form or disposition.

It was the opinion of those who were present at the examination, that the deceased had been living for nine years in the lowest state of infamy, and that he had probably assumed and maintained the disguise of a female, in order the more effectually to conceal his nefarious practices.

Before the coroner it was simply stated, that he had died from disease of the lungs; and, after some irrelevant evidence had been gone into, the jury found a verdict accordingly.

ROYAL SOCIETY.

Rumford Medals. Eight years have now elapsed since these medals were awarded, no discovery having been made, during that period, which appeared to the trustees to deserve these high rewards: we are, therefore, happy to find that the Royal Society has now adjudged them to Professor **Daniell**. It will be recollected that the Rumford medals were founded by Count **Rumford** for the most important discovery, or useful improvement, in any part of Europe, on Heat or on Light. They are directed to be adjudged every two years; and when no new discovery has taken place, during the preceding period, of importance enough to deserve the premium, the value of it is laid out in the purchase of stock, to augment the original bequest. The premium is directed to be given in two medals, struck in the same die, the one of gold, the other of silver, both of them together of the intrinsic value of £60. They have been awarded as follow: 1800, to Count Rumford; 1804, Professor Leslie; 1806, Mr. Murdoch; 1810, M. Malus; 1814, Dr. Wells; 1816, Sir H. Davy; 1818, Dr. Brewster; 1824, M. Fusnel; 1832, Professor Daniell, of King's College, London, for two papers published in the Philosophical Transactions, "on a new Register Pyrometer, for measuring the Expansion of Solids, and determining the higher Degrees of Temperature upon the common Thermometer Scale."

ROYAL INSTITUTION.

The first general meeting of the members of this Institution took place on Friday evening, the 25th January, when a very numerous auditory assembled to hear Professor **Brande**'s observations on the newly proposed system of Chemical Notation, introduced by **Berzelius**, and modified by himself. If such peculiar notations are to be adopted, Professor Brande's is much the most simple and perspicuous scheme; but as we are persuaded that such cryptographies tend more to retard than to advance the science, we trust they will remain, at least in our schools, merely as philosophic curiosities. The most interesting communication, however, was one that, although not publicly made, is by this time too publicly known to require silence on our part, viz. the munificent patronage bestowed on science in general, and this Institution in particular, by Mr. **Fuller**: for, not contented with founding the Fullerian Medals for the encouragement of chemical science, this gentleman is now on the eve of endowing a Professorship of Chemistry in the Royal Institution, and, with sound discretion, has selected Dr. **Faraday** to be the first Fullerian professor. This, however, is not the whole of this gentleman's liberality, although it is all we are at liberty now to communicate. We shall shortly have to record another nearly similar act.

The following are the arrangements for the season:

Evening meetings, every Friday at half-past eight P.M.

Lectures, Tuesdays and Saturdays, at three P.M.

On the Chemistry of Air and Water, by W. T. **Brande**, F.R.S.

On Heat, and the Mechanical Properties of Elastic Fluids, Steam, and the Steam-engine, by the Rev. W. **Ritchie**, LL.D. F.R.S. &c.

On Geology, by **Charles Lyell**, Esq. F.R.S., Professor of Geology K.C.L.

On Electricity and Magnetism, by M. **Faraday**, Esq. D.C.L. F.R.S. &c.

On Botany, by **Gilbert** T. **Burnett**, F.L.S., Professor of Botany, K.C.L.

COLLEGE OF PHYSICIANS.

The evening meetings for the season commenced on Monday, the 28th January. The Lord Chancellor, the Bishop of London, and many other distinguished persons, were present; M. **Clot Bey** also attended. Sir **Henry Halford** read a brief paper on Insanity.

KING'S COLLEGE, LONDON.

THE students of Law and Medicine have established Societies for mutual improvement in this College, which are carried on with great spirit. Three very interesting papers have been read at the latter (which the most concerns us): one, "on Wounds in Dissection," by Mr. PARKE; another, "on Medical Electricity," by Mr. COX; and the third, "on Variola," by Mr. GOOLDEN.

ACADEMIE DES SCIENCES.

DR. ROUSSEAU, whose essay on the Preparation of Ilicine and the use of that proximate principle, and of Holly, in the cure of Intermittent and Remittent Fevers, we published in our Journal for August 1832, among the Transactions of the Medico-Botanical Society, has lately had awarded to him, by the Academy of Sciences, the gold medal, worth 1500 francs. It will be remembered that, for the same discovery, he had previously received the silver medal from the Medico-Botanical Society, the members of which were only prevented awarding him their gold medal by having offered it for a different enquiry. Our opinion of the value of this discovery is fully borne out by the report made by MAGENDIE, who tried it largely in a great number of cases of ague under his care in the Hôtel Dieu; and, as he observes, Dr. Rousseau well merits the prize, "for having added to the materia medica an indigenous remedy, which will be found to be of the greatest value wherever agues are endemic, and the natives poor."

We may take this opportunity of drawing the attention of our readers to the importance of the papers which are read before this Society, for the publication of which we have received the permission of the President and Council.

ZOOLOGICAL SOCIETY.

Lectures on Comparative Anatomy. By Dr. GRANT, Professor of Comparative Anatomy and Zoology to the University of London.

THE study of comparative anatomy and zoology, although it has conferred the highest reputation upon the names of Cuvier, Geoffroy St. Hilaire, Blainville, and other foreign anatomists, has unfortunately been very little pursued in this country; and, if some of our British physiologists have been led, for a time, to make investigations in this branch of science, they have, in most instances, hastily given up the pursuit, lest it should injure their success in the more lucrative practice of their profession. It might have been suggested to them, however, that the fame of Hunter has, perhaps, derived its greatest lustre from his investigations in comparative anatomy and animal physiology; and the museum at the College of Surgeons affords the most splendid monument of his industry and research.

The Zoological Society have begun to emerge from the state of mere showmen, and to evince some disposition to assert their rank as a scientific body, by constituting their scientific meetings on a more liberal footing, having reorganised them on the basis of other learned bodies.

Dr. GRANT, professor of comparative anatomy and zoology in the University of London, has commenced a course of lectures on the Structure and Classification of Animals, to members of the Zoological Society, at their house in Bruton street, which are to be continued every Tuesday and Thursday evenings; and a more interesting course has never been given on the subject. Profound, solid, and scientific in their general character, the learned professor is sometimes carried away by his enthusiasm for the subject, and gives occasionally bursts of eloquent description which astonish and delight his hearers: his explanation of the general characters of the class Aves, and his particular characteristics of the genus Brinana, will fully justify the warmest encomiums.

In fine, these lectures bid fair to give a new impulse to the study of natural history in this country.

Important to Medical Pupils studying for the Army. New Army Regulations in regard to Natural History and Botany.

We understand, by a communication just transmitted to the medical professors in the University, that candidates for the medical department of the army are required, before examination, to produce certificates of having attended a three months' course of lectures on natural history; and another, of equal extent, on botany, at established schools of eminence.—*Edinburgh New Philos. Journal.*

OBITUARY.

DEATH OF JOSHUA BROOKES, ESQ., F.R.S., F.L.S., SOC. CÆS. NAT. CUR. MOSQ. SOC.

This gentleman died suddenly, on the 10th January, at his residence in Great Portland street. For nearly fifty years Mr. Brookes was professor of anatomy to a very numerous class of pupils, whose esteem he always merited, for the patient and even laborious assiduity with which he endeavoured to keep them to their studies, and to perfect them in their knowledge of anatomy. Few, if any, anatomical teachers in this country have ever given up so much time, or evinced such unwearied zeal, as Mr. Brookes always did, during his very long career as a teacher to the fatiguing and by no means agreeable business of the dissecting room; for there he might almost constantly be seen, watching over and guiding the progress of the young anatomists around him. Mr. Brookes' style of delivering his lectures did not, perhaps, rise to eloquence, but he was always fluent, clear, and unaffected in his mode of delivery: his meaning could never be mistaken by the dullest of his auditors. He was, in fact, an excellent teacher of anatomy, in every sense of the word. We profited by his instructions for several years, and we speak, therefore, from personal experience, as well as from the common opinion of those who were then commencing their studies with us.

It is well known that Mr. Brookes formed, by unexampled industry and perseverance, the most splendid and extensive collection of anatomical and zoological specimens ever accumulated in this or any other country, with the exception, perhaps, of that of John Hunter. A few years ago, a great part of Mr. Brookes' museum was sold by public auction, at a considerable loss. Many of the most valuable specimens, it is true, were purchased for foreign collections at high prices, but the average return was lamentably deficient. We know not whether such a hint was ever thrown out at the time, but we think, if an attempt had been made to purchase the museum by a very moderate subscription, that the public, as well as the profession, would have supported the undertaking, and that we might now have had a durable monument to the memory of one of our best practical anatomists and scientific zoologists.

DEATH OF DR JAMES CRAWFORD GREGORY.

It is with sincere regret that we record the decease of Dr. James Crawford Gregory, which took place at Edinburgh, on the 28th ult. He was our contemporary, and son of the illustrious author of the "Conspectus Medicinæ Theoreticæ." Descended from a long line of distinguished professors, his father, grandfather, and great-grandfather having filled the chairs of Mathematics, Institutes, and Practice of Medicine in the Scottish Universities.

He inherited the abilities and talents, if we may use the phrase, of his justly celebrated ancestors. He was a most assiduous and zealous student; and on him devolved the responsibility of supporting and perpetuating the renowned name of Gregory. After obtaining the doctor's degree in the University of Edinburgh, he repaired to France, and there we can attest he was most indefatigable in pursuit of science. We happened to be in Paris at the time, and felt sincere pleasure in observing his unceasing industry, as we, in common with all the disciples of his father, indulged in the gratifying anticipation that he would one day maintain the name of his revered ancestors. At this period the late Dr. William Cullen, nephew to the Scottish Hippocrates, was in Paris, and he, too, evinced the most satisfactory proofs that he was determined to follow in the wake of his renowned relation. These gentlemen published, in 1829, an edition of Dr. Cullen's First Lines of the Practice of Physic, and rendered the work accordant with the views of that period.

The scion of Cullen was cut off in the prime of life, and the representative of the illustrious philosophers of the Gregory family has shared a similar fate. Both would have added lustre to our Alma Mater had they been spared.

Dr. Gregory was one of the finest figures we ever saw. His features were regular, indeed truly handsome, and displayed an intelligence and a benevolence rarely observable. He was indefatigable as physician to the Royal Infirmary; he was the favorite pupil of the great Laennec; and he contributed, to the Edinburgh Medical and Surgical Journal, some valuable papers on diseases of the chest, and on diseases of the kidneys. His complaint was malignant typhus, with which he was said to be infected in performance of his duties at the Infirmary. So great was the malignity of the disease, that, though he was in the prime of life (his age being thirty-two) and had the assistance of Dr. Abercrombie and his cousin, Professor Alison, he sunk on the twelfth day of his illness.

Thus has Scotland to mourn, during 1832, among her illustrious dead, other victims of the king of terrors, Walter Scott, Leslie, Cullen, and Gregory have been gathered to their forefathers.

We are grieved to state, that Drs. Abercrombie and Alison, two of the ablest physicians of Edinburgh, are, according to the newspaper reports of the capital of Scotland, despaired of, (Monday, January 7th.) It is said, that there is a most malignant typhus now prevailing in Edinburgh.—*Med. and Surg. Journal.*

DEATH OF DR. SPURZHEIM.

John Gasper Spurzheim was born in December 1776, at the village of Longvitch, near the city of Treves, on the Moselle. His father was a farmer. He was designed by his friends for the profession of theology, and finished his education at the celebrated university of Treves. He subsequently became a tutor in a private family, and commenced his acquaintance with the well-known Dr. Gall, the founder of the craniological doctrine, as it was then called. In the year 1800, he attended, for the first time, the private course of lectures which Dr. Gall had been occasionally in the habit of giving, at his own residence, for four years past. Convinced that the principles advocated by Gall were founded in truth, and allured by the wide and uncultivated field of original research opened to his view, Spurzheim devoted himself particularly to anatomy and physiology, and, having completed his studies in 1804, became the associate and fellow-labourer of Dr. Gall. Previous to the commencement of this connexion, Gall had developed the principal points in the philosophy of his system, which may shortly be stated to be, firstly, that the moral qualities and intellectual faculties are innate; secondly, that their exercise, or their manifestation, depends upon the organization; thirdly, that the brain is the organ of all the propensities, mental emotions, and intellectual faculties; fourthly, that the brain consists of as many separate organs as there are propensities, feelings, and faculties, essentially differing from each other; and fifthly, that the form of the head, or cranium, represents, in the majority of cases, the form of the brain, and suggests varied means of ascertaining the primary qualities, and faculties, and the situation of their organs. Besides the development of these principles, Dr. Gall had pointed out the localities of the principal organs, and laid the foundation of his new anatomy of the brain.

Drs. Gall and Spurzheim, thus associated, unintermittingly pursued their inquiries; maturing their ideas, combating objections; multiplying observations, and examining the true structure of the brain. To this last department, it is understood, that Spurzheim's attention was at this time chiefly directed. In 1805, Dr. Gall was ordered to discontinue teaching his doctrine, or to quit Vienna: he chose the latter alternative, and with his associate, set out on a journey through Europe. They visited the principal cities in Germany and the north of Europe, and arrived in Paris in 1807. In 1808, they presented a joint memoir on the Anatomy of the Brain to the Institute; and in their work they first described the true structure of the convolutions, and their connexion with the rest of the cerebral mass. Shortly after, they commenced and proceeded jointly in their great work, entitled "The Anatomy and Physiology of the Nervous System in general, and of the Brain in particular; with Observations upon the Possibility of ascertaining several Intellectual and Moral Dispositions of Man and Animals, by the Configurations of the Head," four vols. in folio, with an atlas of one hundred plates. During the publication of this magnificent work, some disagreement, it is alleged, occurred between the authors, and the work, which was not completed until 1819, was continued by Gall singly.

In 1814, Dr. Spurzheim visited England, and, by his lectures and writings, disseminated a knowledge of phrenology, as he now termed the science, and rendered its principles in some degree popular. A most violent attack was now made on the doctrine and its authors, by the late Dr. John Gordon, in the 49th number of the Edinburgh Review. "We look," says Dr. Gordon, "upon the whole doctrines taught by these modern peripatetics (Drs. Gall and Spurzheim,) anatomical, physiological, and physiognomical, as a piece of *thorough quackery* from beginning to end; they are a collection of new absurdities, without truth, connexion, or consistency, which nothing could have induced any man to present to the public, under pretence of instructing them, but absolute insanity, gross ignorance, or the most matchless assurance." To this criticism, Dr. Spurzheim published a calm and temperate reply. In 1817, he returned to Paris; and revisited England in 1825. Until his departure for America, he continued to give lectures in the principal cities of England, Ireland, and Scotland; and occasionally, during this period, passed his time at Paris.

About the time of his return to England, he married a French lady, but three or four years afterwards had the misfortune to lose his wife: she left no children.

During his residence in England, Dr. Spurzheim published the following works, some of which have passed through several editions: 1. The new Physiognomical System; 2. Phrenology, or the Doctrine of the Mind; 3. Philosophical Principles of Phrenology; 4. Outlines of Phrenology; 5. Elementary Principles of Education; 6. Examination of the Objections made in Great Britain against Phrenology; 7. Observations on Insanity; 8. Illustrations of Phrenology, in connexion with the study of Physiognomy; 9. A Catechism of Man: 10. The Anatomy of the Brain. Some of the views taken in these works by Dr. Spurzheim, differ from those advanced in the writings of Gall; and to the list of organs given by the latter, Dr. S. has added nine others. To these he has given the names Inhabitiveness, Conscientiousness, Hope, Marvellousness, Size, Weight or Resistance, Order, Eventuality, and Time.

A few months after, Dr. Spurzheim departed for the American Continent, and, having arrived at Boston, commenced a series of lectures. He had finished his course, with the exception of the concluding lecture, which he was prevented from finishing by severe indisposition, of which there had previously been some striking indication. His strength was evidently exhausted the last time he appeared in public; and when he announced his concluding lecture for a future evening, having, in the mean time been obliged to change his place of lecturing, and not having decided where he should assemble his hearers the next time, but designing to consult their wishes, he inquired of them "in what place shall we meet the next time?" a question which proved to be of sad and foreboding import. He did not live to meet those friends again, as he and they had fondly anticipated. The indisposition (continued fever) under which he was then suffering, gradually assumed a more severe character, and unhappily the state of his feelings produced a reluctance to call in medical aid, in the early stage of his illness; added to which was that inevitable anxiety of mind, which preys on the physical constitution in every one situated as he was, alone, and far remote from his native land. At length his physical powers, strong as they appeared to be, yielded to the disease, which perhaps operated also with augmented strength on a constitution of great susceptibility, and in a climate to which it was not habituated. This eminent man breathed his last on the 10th of November, 1832, in the fifty-eighth year of his age. The funeral took place on the 17th November, on which occasion, after the prayer, an eulogy was pronounced by Dr. Jollen, the German Professor of Harvard University, and an ode by the Rev. Mr. Pierpont was also sung.

The body was examined in the presence of many physicians, and the following appearances were found. The dura mater adhered to the cranium; pia mater was injected, but there was no effusion beneath it. Lungs healthy. The valves of the aorta were slightly thickened, and the caliber of the artery appeared dilated. The heart, a little larger than ordinary, was surrounded by a greater quantity of fat than usually exists in persons of Dr. Spurzheim's age. The ascending colon adhered to the abdominal parietes and the adjacent organs; but these adhesions did not appear to be of recent formation, although they were soft and yielding, and it did not seem probable that they had accelerated the fatal termination of the disease. The intestines were discoloured in various parts, but there was no alteration in the mucous membrane. Dr. Jackson, of Boston, who has published a detailed statement of Dr. Spurzheim's illness in an American Journal, remarks, at the conclusion of his account, that patients rarely die of idiopathic fever which is not complicated with some inflammatory disease, and that, therefore, the dissection was interesting in a pathological point of view, inasmuch as it furnishes one example of the existence of fever without inflammation.

MONTHLY LIST OF MEDICAL BOOKS.

[*Medical Works cannot be entered on this List unless a copy be sent for the purpose, the titles of Books having frequently been sent to us as published, which have not appeared for weeks, or even months, after.*]

The Cyclopædia of Practical Medicine. Edited by John Forbes, M.D., F.R.S., &c. Alex. Tweedie, M.D., &c., and John Conolly, M.D., &c. Part XIII. (published in Monthly Parts,) January 1833. Containing *Inflammation* (continued), by Dr. Adair Craufurd and Dr. Tweedie; *Influenza*, Dr. Brown; *Insanity*, Dr. Prichard; *Irritation*, Dr. C. J. B. Williams; *Ischuria Renalis*, Dr. Carter.—Large 8vo. pp. 115. Sherwood, Gilbert, and Piper; and Baldwin and Cradock, London.

On the Structure of the Human Placenta, and its Connexion with the Uterus, &c. By Thomas Radford, senior Surgeon to the Lying-in Hospital and the Dispensary for Diseases of Women and Children, and Lecturer on Midwifery.—8vo. pp. 23; three plates. Manchester.

A Further Examination of the Principles of the Treatment of Gout, with Observations on the Use and Abuse of Colchicum. By Sir Charles Scudamore, M.D. F.R.S. &c. Second Edition, considerably altered and enlarged.—8vo. pp. 127. Longman and Co.

APOTHECARIES' HALL.

Names of Gentlemen to each of whom the Court of Examiners have granted Certificates:

JAN. 3.

John Crouch, of St. Croix, Hants.
Thomas Dowse, Skelmanthorpe
Henry Dowland Haskins, Oxford
James Hancock, Hawarden
Thomas Ward, Tonbridge.

JAN. 9.

Joseph Baines, Bradford, Wilts.
Francis Fullager, Chichester
Thomas Norris, Hull
Wm. Charles Stedman, Portsmouth.

JAN. 17.

Samuel Ford Allnutt, Portsea
John Morgan Bryan, Northampton
John Wm. Cartledge, Chesterfield
Christopher Elliott, Pilltown, Ireland
James Flesher, Tiffield, Northamptonshire
Uniacke Ranayne, Lismore.

JAN. 24.

Pye Henry Chavasse, Birmingham
Henry Hannam Cort, Ripley, Surrey
Thomas Young Cotter, Lisson Green
Henry Pye Lewis Drew, Gower street
John Evans, Farningham
Samuel Edward Fitch, Cambridge
Richard Brinsley Hinds, Brunswick square
Joseph Hutchinson, Lincoln
Edward Parke, Liverpool
Edward Williams Richards, Tregaron
Wm. Waring Saxton, Whitchurch, Salop
Moses Thompson, Pontefract
Wm. Wilton, Guildford.

METEOROLOGICAL REGISTER,

By Messrs. Harris and Co. Mathematical Instrument Makers, 50, High Holborn.

Dec.	Moon	Rain gauge.	Thermometer. 9a.m.	max.	min.	Barometer. 9a.m.	10p.m.	De Luc's Hygrometer. 9a.m.	10p.m.	Winds. 9 a.m.	10p.m.	Atmospheric Variation. 9 a.m.	2 p.m.	10 p.m.
20			36	43	35	29.72	29.80	75	75	NW	W	foggy	cloudy	foggy
21			43	48	42	.54	.53	77	79	SW	W	showery	foggy	
22	●	.09	46	49	46	.63	.62	80	80	WSW	SW	foggy		
23			49	53	45	.59	.74	82	83	SSW	SW	rain		
24			45	49	43	.82	.71	82	80	WSW	SW	foggy	fine	fine
25			48	54	39	.78	.86	80	79	SW	SW	rain	showery	fine
26			40	45	36	.93	.96	77	79	WSW	WSW	foggy	cloudy	.
27			38	44	33	.96	.96	79	80	W	WNW		fine	fog
28			35	42	34	.86	.80	80	81	N	SE	fog	fog	cloudy
29			40	42	36	.55	.53	82	82	SE	SE	fog	rain	sleet
30	☽		39	41	34	.47	.42	80	78	SE	SE	fine	fine	cloudy
31			37	40	35	.63	30.02	78	80	W	N	foggy	fog	
Jan. 1			36	42	35	30.23	.21	80	83	WNW	WSW		cloudy	rain
2		.51	45	47	41	29.86	29.92	82	84	SW	N			sleet
3			42	44	36	30.23	30.33	84	80	E	NNE			fine
4			37	39	32	.36	.29	77	76	ENE	NE	fine	fine	
5			35	39	32	.14	.14	76	75	NE	SE			
6	○		33	33	30	.26	.29	75	75	SW	W			
7			32	36	33	.36	.41	76	75	W	NW	foggy	fine	
8			36	39	31	.45	.46	75	76	N	E	fog	cloudy	
9			35	36	30	.38	.39	76	77	SE	SE		fine	
10			30	35	30	.05	29.89	77	79	SSE	SSE			
11			32	39	32	29.72	.63	79	80	SSE	SE			foggy
12	☾		36	40	36	.66	.67	80	80	SE	SE	foggy		cloudy
13			40	43	37	.84	.96	82	82	E	E	cloudy	cloudy	foggy
14			41	43	37	30.02	30.02	85	83	ESE	SE	foggy	fine	fine
15			40	41	38	29.97	29.97	82	79	ESE	SE	fine		
16			40	42	37	30.00	30.02	77	79	ESE	E		sleet	cloudy
17			40	42	38	29.93	29.88	79	80	E	ENE	fog	cloudy	fine
18		.05	38	40	36	.98	.97	80	78	NE	E		cloudy	mist
19			37	39	34	30.07	30.07	76	75	ESE	ESE		fine	sleet

The quantity of Rain fallen in December, was 71.100ths of an inch.

THE LONDON
Medical and Physical Journal.

409, VOL. LXIX.] MARCH 1833. [81, *New Series*.

"For many fortunate discoveries in medicine, and for the detection of numerous errors, the world is indebted to the rapid circulation of Monthly Journals; and there never existed any work to which the Faculty in Europe and America, were under deeper obligations than to the 'Medical and Physical Journal of London,' now forming a long but an invaluable series."—RUSH.

ORIGINAL PAPERS.

INTERMITTENT FEVER.

Remarks on the Pathology and Treatment of Intermittent Fever. By JOHN BELL, M.D.

THE influence of hypothesis in the treatment of intermittent fever, has been of long duration and unequivocal injury. Reformation can only be brought about by our consenting to remove this disease from the list of exceptions, and to subject it to the same rules of analysis which are deemed valid in other maladies. For this purpose, we must cease to regard it as originating from a specific cause, and cured by a specific remedy. The product of atmospherical vicissitudes and distemperatures of seasons, intermittent fever, will be found akin to all the varieties of gastro-intestinal inflammation, as well as to hepatitis, splenitis, rheumatism, catarrh, chronic pleurisy, pneumonia and bronchitis, peritonitis and its attendant ascites; by some one or many of which it is often sustained. Its type is that often assumed by all the phlegmasiæ and hemorrhagies, and the innumerable tribe of maladies called nervous, having their origin in a lesion of some part of the cerebro-spinal axis. There is scarcely a disease in the nosological catalogue which has not at times preserved a distinctly periodical character; its invasion being marked by a chill, and the subsequent fever terminating in sweat. I have seen fatal inflammation of the liver and gangrene of the lungs exhibit four distinct tertian paroxysms; and the instances of periodical fever originating in and kept up by irritation of the stomach, and even bladder, are of common occurrence and familiar observation. It is not necessary for me to repeat the opinions which I advanced on former occasions respecting the erroneous views of the origin of periodical fevers,* and of the unfortunate therapeutical treatment based on them. My purpose will be answered by thus briefly reminding the reader of the periodicity of inflammatory, hemorrhagic, and nervous diseases; and that, consequently, no single remedy nor uniform course of treatment ought to be recommended for the mere type, without reference to the nature of the functional disturbance and the extent of organic lesion. Clear and obvious as this principle may seem to us, the practice has been too generally at direct variance with it. An individual must often be content to suffer from oppressive headach, or pain and heat of the stomach, or of one or both hypochondriac regions, or dysenteric gripings, thirst, dry pain, and general uneasiness; if with these states be associated periodical paroxysms, called intermittent fever. Supposing the stomach and bowels to be well emptied and cleansed, bark, in its several forms, is poured in, with the accompanying assurance, on the part of the attending physician, that this will cure all his complaints, by preventing the return of the chill. Not unfrequently, however, the promise proves to be fallacious: the symptoms are unmitigated in violence, and the chills are then declared to be very difficult to remove. What is the reasoning of the physician in this emergency? He meditates on all the tonic remedies which are alleged to have the power of curing intermittent fever: he selects arsenic from the list, and administers it to his patient. Persevered in for some time, this poison breaks up the periodical character of the disease; there is no longer a recurrence of chills, and the invalid is congratulated on his escape from disease. But health is slow in its approaches; he digests badly, has pain in his stomach, with occasional nausea and disturbed bowels; or, in a more favorable state, he complains of dull, fixed headach, pain in the side and right shoulder, thirst, and scanty urine. In place of these there will be occasionally a tumid abdomen, œdematous extremities, cold skin, and sluggish pulse. Reference being had to the want of appetite and bad digestion, some of the milder tonics are administered; or, the disorders persisting, visceral obstruction is suspected, and an alterative course of mercury is prescribed. The first palliate, perchance, some uneasy sensations for awhile; but fail to prevent, if they do not aggravate the confirmed dyspepsia now entailed on the unhappy invalid. The second, after being carried to the extent of producing salivation, seems to remove or suspend the enlargement of the liver or spleen, and carry off the effused serum in the cellular tissue, but in a few days after, especially if he be exposed to an easterly wind or night air, the chill returns, and the patient is doomed to the same round of tonics and alteratives as before, with a still stronger conviction in the mind of his physician that the long duration of the disease renders it more than ever indispensably necessary to husband his strength by nourishing diet, porter, wine, &c. Winter now approaches, and a troublesome cough, with pleuritic stitches, is superadded to gastric or hepatic derangement, or both.

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* See the papers on Periodicity and Miasm, in Dr. CHAPMAN's Medical and Physical Journal, and in the North American Med. and Surg. Journal.

In drawing this picture of the progress of intermittent fever, its complications, effects, and treatment, I am not conscious of exaggeration or misrepresentation. The dominant idea in the mind of the physician, for one in his case will represent a large class, is debility, and the necessity of tonics exclusively for its cure. How powerful the force of associations! The same state of the circulation and digestive passages; the pain in the head, side or chest, which, in other circumstances, would be met by the remedies for inflammation, are here, in consequence of their connexion with periodical fever, regarded as mere accidents, and adventitious and secondary symptoms, which we must not attempt to remove by sanguineous depletion, for fear of enfeebling the patient: but this fear would be just as well founded in periodical hemorrhages, epilepsy, gout, and rheumatism.

In intermittent fever, as in all the diseases of autumn, the stomach is much disturbed in its functions, especially just before and during the paroxysm. Nausea, vomiting, thirst, and heat of the epigastrium, are common symptoms on the subsidence of the cold and coming on of the hot stage, and are often rendered more violent by the stimulating draughts taken during the period of the chill. Here begins the deviation from the principles which govern us on the attack of other diseases. In this latter case we are wary in prescribing any stimulant or irritant beyond external warmth or a simple warm diluent, however great may be the rigor, well knowing that the subsequent reaction will only receive additional aliment from our efforts to rouse the patient from the state of depression in which he is thrown during the first invasion of the disease. Whereas, in the chill of an intermittent fever, the popular practice, too readily countenanced by the profession, is to swallow all kinds of heating drinks, alcoholic, cordial, and vinous. The hot stage having now come on, aggravated by these imprudences, we are counselled to use various mixtures, with the intention of quieting the irritation of the stomach and bringing on diaphoresis. Laudanum, the alkalies, and carminatives, constitute the basis of most of these prescriptions: all of them are more or less stimulating, and in no one of them can we repose confidence in gastric irritation, or gastritis; for such, in fact, pending the paroxysm, is the true state of the stomach. Experience, corroborating the inductions of theory, daily teaches us that the fewer drugs given, and the simpler, cooler and blander the drinks, the more shall we have it in our power to control vomiting and pain, heat and distress of the stomach, and associated disturbance of the head. These failing, bleeding from the arm, cold affusion, and, in more obstinate cases, leeching and cupping, are found to be the most efficient means of quieting an irritable stomach. The reaction in the hot stage consists not only of increased gastric sensibility, but of accelerated circulation and excessive capillary and nervous excitement. The pulse is frequent, full, and vibrating, and all the symptoms evince a general disturbance of the organs of assimilation and secretion, including the stomach, liver, kidneys, lungs, and skin. Of this the vomiting at the beginning, and the sweat and urinary deposit at the termination of the hot fit, afford abundant evidence.

The call for moderating excessive excitement is not less imperative here than in other maladies, distinguished by similar symptoms, however variously named. We are well aware of the general principle on these occasions, that the risk of subsequent languor and engorgement, or even disorganization of the organs and disturbance of functions, is greater if the excitement be allowed to wear itself out by our abstaining from those means calculated to moderate it.

In the case before us, we have superadded to gastric irritation of the stomach, a morbidly exalted action of the other great viscera. Of course, in addition to the indications furnished by the former, we have those supplied by the latter, to direct us to the use of the lancet and the application of cold. In fact, the treatment here is identical with that in every febrile paroxysm of any intensity, whether it be of regular, or spurious, or malignant intermittent, or remittent, yellow, or bilious. It is true that a temporary crisis will generally take place in regular intermittents, without any interference on the part of the physician; but every paroxysm, especially if neglected or mismanaged, predisposes the subject of it to complications and aggravations, at each successive return; and the stomach, liver, and head, from being periodically affected, are after awhile permanent sufferers.

Bleeding in the hot stage of intermittent fever, thus pointed out by inductive reasoning, has been proved by experience to be on many occasions decidedly beneficial. It is now many years since, whilst yet a student in Virginia, it became my duty to see and occasionally prescribe for a young man of a thin spare habit of body, who had been much reduced by repeated attacks of intermittent fever. Bark and arsenic had been administered in vain. Influenced by the recommendation of SENAC, whose work on Intermitting and Remitting Fevers I had just perused, I opened a vein in the arm of my patient during the next hot fit, and took away a pint of blood. The relief was immediate; the force of the paroxysm soon subsided; the apyrexia was complete; and a few doses of bark were sufficient to prevent the next fit. He speedily recovered his health and strength, and remained clear of intermittent fever. From that time to the present I have not hesitated to use the lancet in every case of periodical fever, in which either the apyrexia was not so complete as to leave the patient entirely clear of all gastric and cerebral distress, or in which the paroxysms had been of frequent recurrence, and untractable under the use of bark. I have usually preferred, when the choice was in my power, bleeding during the hot stage to doing it in the apyrexia; but the experience of every additional season convinces me that, in this latter state also, the employment of the lancet will realize all our best hopes.

Both as adjuvant to and substitute for the lancet in the hot stage, cold affusion or immersion is entitled to special notice and favor. The tranquillizing and pleasurable effects of cold water to a patient, in the burning heat of fever, must be actually experienced by an individual before he can properly appreciate them. The chief obstacle to the use of this remedy, now that the prejudices of ignorance are in a great measure dissipated, consists in the want of suitable conveniences for bathing, among the larger portion of those who suffer from intermittent fever. Seldom, however, shall we be unable to procure a large tub for the patient to stand or crouch in, and one or two buckets, the contents of which are to be poured on him. Sponging the surface of the body may be had recourse to for the purpose of allaying the morbid heat in the hot stage; but it is an indifferent substitute for immersion or affusion, unless in particular cases and circumstances of age, sex, and states of mind, which we can readily conceive.

Coinciding with the effects of cold water, externally applied, will be those from its internal use. In lieu of water in its simple state, we may give it slightly acidulated with lemon juice, or cream of tartar; or, if the stomach be much distressed, gum arabic will be a useful addition.

Having by these means brought our patient through the cold and hot stages, the sweating will seldom be excessive or enfeebling, and the succeeding period will more probably be, not in name, but in fact, that of apyrexia. Should it prove such, that is, should the tongue be moist and but little loaded, and the skin soft, we can then, with every prospect of entire success, give the bark or its salts in full doses at short intervals, until, in the revolution of time, the epoch arrives at which the next paroxysm would probably have come on.

It will be seen that I am not so exclusive as to recommend bloodletting and cold as remedies, which, if used during the hot stage, are of themselves capable of curing intermittent fever. But thus much I can aver, that the febrile exacerbation will be briefer in duration and diminished in violence, the succeeding interval freer from all unpleasant sensations, and the return of the paroxysm postponed, and, when it does come, rendered less violent, after the use of the lancet.

If the period following the paroxysm be not one of complete apyrexia, and there remains some heat and tenderness in the epigastric region, with a furred tongue and red at the borders, we shall, for the most part, only increase the general discomfort of the patient by administering bark and other tonics, wine and rich food; even though, by this treatment, we prevent the coming on of the next paroxysm. The case is to be treated in all points as we would treat gastric irritation under other circumstances, viz. by simple drinks and very light bland nutriment, and moderate exercise, with pediluvium or the warm bath.

I do not speak of the state of the pulse during the apyrexia, because I consider the indications which it furnishes as very fallacious. It is most common to find it exhibiting under the finger a certain degree of activity, compounded of fulness with vibration, in the progress of intermittent fever: but this resistance furnishes hardly any reason for depletion, if the stomach be sound, tongue moist, and skin soft; nor would its smallness and feebleness be an argument for prescribing the bark, or abstaining from general or local depletion, or both, if the stomach were much distressed, the head pained, the hypochondria tender and tumid.

I hold it as a fair inference from pathological phenomena, justified by large experience, that, in this last-mentioned condition of things, bloodletting, in the interval of intermittent fever, is as safe and efficacious as in any other form of disease whatever. It removes phlogosis of the mucous membranes of the digestive and pulmonary apparatus, so often combined in the subjects of intermittent fever, at the beginning of winter and spring; as well as prevents engorgement of the liver and spleen, and aids in removing it if once formed. The prevention of the paroxysm becomes, after the use of the lancet, a most simple affair. Pounds of bark or drachms of quinine have been given in vain to cure an intermittent fever, which has in a short time completely yielded to a few doses of these medicines, when their administration was preceded by a single bleeding. Of this fact I have had numerous examples: and so much were the patients themselves surprised at the prompt relief afforded, that, overlooking the bleeding, they imagined the quinine pills which they had taken afterwards, to be a new medicine, possessed of uncommon and peculiar powers. What is said of general bleeding will apply in many cases to topical depletion, by means of leeching or cupping. The predominance of gastric symptoms would point out the propriety of applying leeches over the epigastrium; the complication of pulmonary ones would indicate the use of cups to the chest. Whether bleeding from the arm shall precede these operations must depend on the intensity of the visceral disease and the circumstances of the constitution, and general habit of body of the patient. The former will of itself most generally meet our expectations, if a regulated and reduced diet be persevered in, so that the stomach, ceasing to be offended, may recover from its state of irritation.

By an adoption of this plan, if we do not entirely remove the periodical paroxysms, we at least reduce them to their simplest element, or that of nervous irritation. Nutrition even may now go on, and the individual's health not be materially deteriorated. But, as before remarked, we need not subject him to the experiment. Bark, or some kindred tonic, will now readily suffice to accomplish a perfect cure. Very different is the result, when, without regard to the capillary system and the membranes which it mainly composes, we are satisfied to destroy the periodicity, and nurse ourselves with the illusion that we have removed the disease, because we have suspended the return of pure nervous irritation.

Of other remedies during the interval of intermittent fever, I deem it needless to say much, because every year diminishes for me the number, by my discovering the greater success attending a few than many. Were I required to speak of any one medicine laying claim to pharmaceutical activity, which I have used with most advantage in a period often necessarily intervening between the use of the lancet and the employment of the salts of quinine or the bark, I should unhesitatingly instance the blue pill. Not unfrequently, when the disease prevailed so extensively in the city and its vicinity a few years ago, I gave a five-grain pill of the blue mass at night and the cinchonic preparations during the following morning, with the effect of promptly arresting quotidian fevers, which had not yielded to the bark alone. The practice is equally applicable to tertian fever. I must add, however, that when this course was followed, I had not recourse to the lancet with the same freedom as subsequently. Bloodletting simplifies the practice so much, that we are enabled in the majority of cases to dispense with any intermediate medication between it and the use of the bark. I have indeed prevented a return of the paroxysm by giving five-grain doses of the blue mass three times a day, after bleeding; but although this will in some instances be entirely successful, I am far from recommending it as a general rule of practice.

With still greater hesitation would I encourage a perseverance in the use of the mercury until salivation had been produced. I have seen the fits suspended by the mercurial disease, but I have never known a patient to escape from a speedy relapse, if the cinchonic preparations had been withheld. Twice in my own case, when suffering from the disease in China, in the year 1818, I arrested the disease by slightly touching the gums; but a relapse soon followed, on the very first exposure to the night air in one case, and to an easterly wind in the other. Removal to the seashore at Macao, and a few doses of bark, very promptly restored me to comparative health, and allowed me, at the proper season, to discharge my duty as the medical attendant on the American shipping then lying below Canton.

In illustration of the modifying influence of climate on the progress of disease and the effect of remedies, it is but right for me to state that, during the months of September and October, when there were most sailors in that port, and when the intermittent fever was rife, I was not baffled in a single intance in my attempts to cure, by a very simple treatment, those subjected to this disease. Sometimes evacuations were premised; at other times they appeared unnecessary. The chief reliance was on the bark, in drachm doses, administered at intervals of every two hours, beginning at the expiration of one paroxysm, and continuing the medicine until about an hour before the epoch at which the next would have come on, if no curative measures had been adopted. Rarely did a patient suffer from the third paroxysm of a quotidian, or the second of a tertian; nor was he long in being restored to ship duty.

It is not easy for me to pronounce to what extent these men would have suffered from relapses had they remained in Canton during the winter, or what was the state of their health in the following spring at home; but I have reason to believe that relapses with them were not unfrequent. Be this as it may, I have not found the above simple practice answer in our own country, in which, from the excesses and vicissitudes of climate, visceral inflammation and engorgement are so common; while the same relief is not afforded as in tropical regions by copious cutaneous transpiration.

Occasionally we hear of practitioners relying exclusively on the use of the cold bath for the cure of intermittents. A knowledge of the directly sedative effects of cold, and observation of its power of reducing febrile action to the normal healthy standard, as in the hot stage of intermittent fever, will make us slow to direct it during the interval, when there is often little or no superfluous excitement, and the predisposition to chill is manifestly great. It is hardly wise to irritate a paroxysm of fever by subjecting an individual, whose nervous system is rather enfeebled than excited, to a cold bath. He is necessarily chilled; has some rigors; and in the most favorable state a subsequent glow and reaction. Nor does the disturbance end here: pains in the limbs and head, and languor are often complained of by those who use the cold bath, when the system is not above the natural level of excitement. From these premises, not a little strengthened by experience, I should feel inclined to regard habitual cold bathing in the interval as a hazardous remedy, and rendered often mischievous by the prevalent errors regarding its modus operandi. Very different are its effects when used in the hot stage of intermittent, or in the more permanent capillary excitement of gastro-cerebral fever, usually denominated typhus. The morbid excitement of the sanguineo-nervous structures, entering into the composition of the membranes, and chiefly instrumental in the secretions, including that of caloric, is abated and often entirely removed; the patient is rendered tranquil, and enjoys a pleasant slumber unbroken by the former irritations of heat and thirst. Just in proportion as the state of the patient during the interval approaches to that exhibited in the hot stage will cold bathing be useful, but not otherwise. Hence, if there be a steady dry heat of the skin, frequent pulse, with thirst, and little or no appetite, we shall derive good effects from cold affusion in the period between the paroxysms. This remedy is not therefore, as often taught, akin to bark; the two stand opposed to each other in their effects, and their use is only properly called for under different and opposite circumstances: the one to allay morbid irritation and inflammation; the other to exalt and strengthen parts already feeble.

A review of the effects of arsenic in intermittent fever, that is, on those labouring under the disease who have taken it, would, on calm and dispassionate reflection, induce us to wish that its use had never been proposed. The amount of mischief which it has produced must have been excessively great, and exceeding the good which it has been alleged to do, in the same proportion in which cases, where it has been given in ignorance of its operation and the state of the system, have exceeded those where it was administered with all the reservations and restrictions which could be suggested by cautious observation. We are told that it has cured when the bark has failed: but I think it has been sufficiently shown that if the bark fails we have other duties to perform towards our patient than hunting out fresh tonics. When thus unsuccessful, we shall find the stomach irritated and perhaps inclined to phlogosis, or there is a chronic hepatitis and a tendency to dropsical effusions. Now, most assuredly, arsenic, even if it arrest the chill, is not the appropriate remedy in these circumstances. If we persist in giving it, we do so at the peril of our patients, to whom we stand fearfully responsible for the chronic gastritis thus entailed on them. Three of the most obstinate cases of disease which were presented to my notice during last year, were of persons who had used Fowler's solution for the cure of intermittent fever. One was a young man from the country, who had been cured of the chills by this medicine, but who suffered greatly from pain and heat of the stomach, which had supervened since he began using the solution. Two bleedings and reduced diet made him more comfortable; but I was not permitted to see him entirely recovered, in consequence of his return to the country. The next was a young female, who, when I saw her, was greatly distressed by irritability of the stomach, with fixed pain and frequent vomiting; her pulse was hard and active; the appearance of the complexion and other symptoms induced a belief that she laboured also under hepatic disease. Upwards of two months elapsed before her digestive powers could allow of her using any food at all stimulating. During that period she was frequently bled from the arm and leeched over the epigastrium. The blue pill was administered, and after awhile the sulphate of quinine; but as I soon found, however, the morbid state of her stomuch aggravated by their use, I was content, at last, to rely on depletion, general and local, as above, and occasionally a mild laxative and diluents. Under this treatment she so far recovered as to justify the use once more of the quinine; by which, finally, the disease lost its periodical character, and strength and health followed. The third case, also of a female, was characterized by nearly the same symptoms, but they were of less duration, and were finally removed by several bleedings, and by the use of the quinine.

It would be well for us to bear in mind that there are two modes of poisoning. The one sudden and acute, resorted to in moments of temporary insanity or impious despair, for the purposes of speedy self-destruction, or with malice prepense to take away the life of a neighbour; the other is a slower process, practised by empirics, when they persuade the ignorant and credulous to swallow their nostrums, and, shall we add, by regular physicians when they direct, without due deliberation, their patients to use arsenic, corrosive sublimate, and some other half dozen of heroical medicines.

As it is not my intention to write a systematic essay on intermittent fever, I forbear to pass in review the long list of vegetable and mineral substances which have at different times acquired distinction for the cure of the disease. Of their remedial power I am fortunately ignorant, for the reason that I have always found the cinchonic preparations, and of these the simplest kind, answer all my wishes, when had recourse to with the restrictions already pointed out. The facility with which the salts of quinine can be procured obviates all the difficulties which formerly impeded us in the free administration of the bark in substance. Inability to swallow and retain the former can no longer, as in the instance of the latter, furnish us with a pretext for seeking after new remedies.

There will no doubt be found many, to laud, as heretofore, the combination of bark with opium, serpentaria, the alkalies, &c. or with other bitters and astringents. With such I do not mean to cavil; but would simply express my conviction that if the stomach and system generally be not in a suitable state for the reception of the bark, we but deceive ourselves and injure our patients, if we think that any addition to it of kindred preparations, drawn from the class of stimuli and tonics, or even of antacids or acids, will render it safer and more efficacious. So, likewise, if the stomach be in a proper state for the ingestion of any tonic, we are safe in presuming it is so for bark and its salts. And again, though we may admit that a plurality of remedies, usually called tonics, are each of them capable of curing intermittent fever, we ought by fair induction to allow of the possibility of one condition only of the stomach, in which any of them can be advantageously used.

Having assured myself of the propriety of giving the cinchonic preparations, I begin their use immediately after the termination of the paroxysm; at which time the solution of the fever is most complete, the capillary excitement most subdued, and the stomach most in want of moderate nutritive and medicinal stimuli. Repeated at brief intervals, in full doses, the medicine will be more likely to ward off the expected ensuing paroxysm than if we were to delay its administration until a short time before the epoch of the chill, when the sensibilities of the stomach becoming less, whatever is then taken in lies comparatively inert and unchanged, until the reaction in the hot fit. If, notwithstanding the favorable auspices under which the quinine was administered, the disease still preserves its paroxysmal character, and the stomach and head are distressed, I do not hesitate to suspend the use of the medicine, restrict still more the regimen of the patient, and, irritation continuing, to bleed from the arm or topically. After a timely pause of this kind, the quinine may be again directed with a success incomparably greater, on the score of expedition, comfort, and freedom from subsequent ailments, than would have followed a substitution of other tonics after its first failure.

By those who regard intermittent fever as purely a succession of febrile paroxysms at stated intervals, which return by the force of the habit, various internal and external stimuli have been eulogized for their property of warding off the chill, if taken or applied a short time before the expected return of this latter. Opium and blisters have been recommended in a more especial manner as fitted to answer the view. That they will singly and conjointly often fail we are well aware: but even when they succeed in producing the effects anticipated we are far from having the condition of the patient materially benefited. In preventing a chill they do not on that account remove the internal visceral disturbance by which the system was being gradually brought to this point. Even as revulsives, their operation will be of too equivocal if not perturbating a character to ensure our confidence. It may excite surprise to see the epithet perturbating applied to opium; but those who have witnessed its first effects on the brain and nervous system, and secondary ones on the stomach, will readily understand how this medicine becomes so when untimely administered.

The principle which to my mind seems most desirable to be established in the treatment of intermittent fever is, that in each stage we use the remedies indicated by the group of symptoms at the time, without anticipating future possible evils from present relief on the one hand, or distant good by aggravating actual distress on the other. By a neglect of this important principle, we often make the physician a timid observer, in place of an efficient actor, when he refuses to relieve the sufferer from cerebral, pulmonary, and hepatic congestion, and disorganizing membranous inflammation by copious depletion, for fear of a little understood state of debility being afterwards induced. Changing, at another time, his character, he will be seen urging the use of irritating stimuli on a person already tormented by burning heat and thirst, and general capillary excitement in the second stage of remittent gastric fevers, for the purposes, as he alleges, of giving him strength, and enabling him to digest and be nourished.

The advocates of bloodletting in the cold stage of intermittent fevers admit the correctness of the above principle. They contend that the operation is both justified and called for by the condition of the viscera at the time. The question must be determined by similar arguments and facts to those which have been adduced in favour of, or opposition to, direct depletion, in the stage of oppression and chill in other maladies. The physician is very rarely called upon to give advice before this stage or period of invasion is passed, and reaction has taken place. He is generally well satisfied indeed if he be allowed to act before this latter has been of long duration, and in being thus favoured, he considers himself as attacking the disease at an early period. Deducing our opinion from what is presented to us in the phenomena of the first stage of concussion of the brain, we should say, that, at the beginning of a febrile attack, marked as it is by chill, rigors, listlessness, languor, disinclination to move and think, the nervous system is alone affected, and in virtue of its debility, the secretions, as well of caloric as of different fluids, are suspended. The sanguiferous system is as yet a stranger to the disease, and only becomes interested in proportion as the returning excitement of the nervous system communicates to it fresh stimulus. If prior to this stimulation being transmitted from the nerves to the heart and capillaries, that is, before the disappearance of the chill and cold stage, we abstract blood, it can only be with the intention of diminishing the amount of this fluid, and thereby easing the vessels when the hot stage, or that of reaction is arrived. Accordingly, Drs. **Mackintosh** and **Ridgway**, apparently ignorant of Dr. **Rush**'s recommendation many years ago, to the same effect, tell us, that by bleeding in the cold stage of intermittent fever, the hot and sweating stages have been prevented.

In two cases in which I adopted this practice, the result was not of such a favorable nature. One was evidently benefited; but neither in this nor the other was I dispensed from the necessity of subsequent bleeding before the disease was arrested.

To these I ought to add a third, which, from its rare occurrence and the formidable nature of the symptoms, merits a more particular notice. It was of a young mulatto man, who had been confined to his bed for three weeks by gastric remittent fever. The paroxysms came on at irregular intervals, and were always marked by a frequent and rather full pulse, acrid heat of the skin, especially over the abdomen, and a burning thirst. Frequent bleedings from the arm and cupping over the abdomen had been practised; purgatives of a saline and mercurial character were occasionally administered, which gave some relief at the moment, but always left the stomach and abdomen more tender to pressure, and the skin hotter to the touch. During nearly the whole time the tongue was loaded in the middle with a whitish yellow coat, while its borders and tip were red and shining. After the expiration of the above time convalescence seemed about to be established; the pulse was nearer a natural standard, thirst less urgent, and temperature of the skin, except over the epigastrium, of an ordinary nature. Pressure on the abdomen rendered the pulsations of the aorta very perceptible. The patient gained very little strength, although he was allowed light animal broth and farinaceous food. Visited in the afternoon of September 17th of last year, I found him in a state of great apathy, with an inclination to dose. The pulse was not materially altered, nor was there any other new symptom. A blister was directed to the back of the neck, and a laxative of rhubarb and magnesia at bedtime. At eleven o'clock P.M. I was sent for in great haste, and on my arrival found the patient in a state of complete coma, utterly insensible to all objects of sight, sound, and touch; his limbs at first extended, remained in whatever position they were placed; the pulse was barely perceptible, and the breathing very slow. It was impossible to make him swallow any thing, or to elicit from him the slightest evidence of consciousness. On applying my hand to the epigastrium, I could feel the abdominal aorta beat with considerable force; so also did the carotids. The contractions of the heart were frequent, and laborious. The blister had been put on, but no medicine taken. Sixty leeches were now applied over the epigastrium, and sinapisms to the extremities. After the leeches had begun to fill, the pulse lost somewhat of its extreme tenuity, and by the time they were detached, it had regained its natural volume, was soft and easily compressible. The patient at this time began to move his eyes and the muscles of his mouth and face; he turned a little towards one side, yawned, and stretched himself. The extremities were still cold and unaffected by the sinapisms. Before all the leeches were removed, the skin became moist in places; and finally a sweat covered the face, trunk, and limbs, with the exception of the hands and feet. Enemata of tepid water were administered at different times through the night. In the morning, though languid, he was partially sitting up in bed, by leaning on his elbow, helping himself to some light nutriment. In the afternoon, of this day he experienced some rigors, which disappeared in the evening in moisture on the skin.

On the evening of the following day, 19th, by eight o'clock, he was in nearly the same state as on the 17th, being completely comatose. Cups in large numbers were now applied to the temples, and over the abdomen, so as to detract about ten ounces of blood. The effect was most salutary, and the recovery even more prompt than from the first attack. Enemata of cold water were given on the present occasion.

An examination of the symptoms of the case on the morning of the 20th, as presented by the pulse and skin, seemed to justify the use of the quinine, from which the furred and chapped tongue on the preceding days had deterred me. A minute inspection of this organ now showed me that under this dry and cracked coat it was pale, and rather thicker than natural. This appearance was readily recognizable by looking at the tip and sides of the tongue. A solution of the sulphate of quinine in water, ten grains to the ounce of fluid, was directed. Of this a tea-spoonful was taken every hour until the afternoon. There was then a very slight exacerbation. The medicine was resumed on the following day, and continued for several days. The patient was thenceforward clear of paroxysmal attacks, and gradually and regularly regained his strength and health.

Here was an extreme case, in which the coma, evidently a substitute for the cold stage of intermittent fever, was relieved on both occasions by a free abstraction of blood. The subsequent reaction and distress were very inconsiderable, and did not on either occasion prevent the patient from sleeping quietly during the remainder of the night.

Some of my readers will doubtless be surprised at my silence on the subject of emetics and purges in intermittent fever. They may feel inclined to regret this omission the more, as to them it will seem an evidence of the predominance of French doctrines. Before replying to this supposition, I would recommend to those who are so backward in giving credence to the weight of contemporary authority, a short essay in a small book by Cleghorn. The chapter on tertian fevers, in his "Observations on the Epidemical Diseases of Minorca, from the year 1744 to 1749," to which I allude, is the production of a patient and experienced observer. Of nearly a hundred persons who perished in malignant tertians, and who were examined by him after death, the contents of the abdomen were in all greatly affected with congestion and inflammation. It was natural then for him, when called in the beginning of tertian fevers, to take away some blood from people of all ages, unless there was a strong contra-indication; and farther, if a violent headach, and obstinate delirium, and great heat or pains of the bowels were urgent, within a day or two he repeated the bleeding, "by which seasonable evacuation the vehemency of the paroxysms is somewhat diminished; the apyrexias become more complete; the operation of emetics and cathartics is rendered safer and more successful; and the terrible symptoms which often make their appearance about the height of the distemper, such as raving sopor, difficulty of breathing, inflammations of the abdominal viscera, &c. are either prevented or mitigated." The author adds some cautions in the use of the lancet, if the disease had continued some time, and the patient was very feeble; or if the paroxysms of the disease were attended with profuse evacuations, whether by vomiting, purging, sweating, or a hemorrhage from the nose. In all such cases, however, I have bled with advantage, after I had convinced myself that there was protracted irritation or engorgement of any of the viscera. Cleghorn tells us that he commonly opened a vein at the beginning of the hot fit; but if this time had passed before his being called, he bled in the evening when it abated or went off, that he might be at liberty next day to make use of the remission or intermission, which commonly happens in the morning, to evacuate the first passages.

As explanatory of my own views in withholding the use of emetics in intermittent fevers, and, at the same time, as a reply to the cavillers against what they are pleased to call the refinements of French practice, I will venture to extract, verbatim, the entire paragraph in which their own classical CLEGHORN, one of those whom RUSH is said to have called medical apostles, gives his opinions on the subject.

"It is a controverted point whether it is best to discharge those noxious humours by vomit or stool. At first view vomits seem to be most eligible, as they quickly empty the superior part of the alimentary tube, which appears to be the principal seat of the morbific matter. But it must be considered that whatever irritates much, and produces violent commotions, ought to be avoided in the present case. Cave ne inducas effervescentiam biliosorum is a caution given by Avicenna; and the Spaniards, as well as the Italians, if their physicians may be credited, cannot well bear rough medicines of any kind. (Vid. Bagliv. lib. i. c. xv. § 5.) Besides, the inflammations of the bowels, too frequently accompanying tertians, are exasperated beyond expression by the strong contraction of the diaphragm and abdominal muscles in the operation: and if the spleen or liver is disposed to become putrid, which is no uncommon case in these fevers, it is needless to point out the dangerous consequences that may result from the repeated efforts of vomiting. For which reasons, mild purgatives, though less powerful remedies, are the safest, and therefore to be preferred in the generality of cases. Those which I have found most beneficial are senna, manna, cremor tartari, but above all the sal catharticum amarum, (Epsom salts), which neither gripes nor disturbs the body, and seldom fails of having the desired effect in a few hours, a circumstance of great moment where the intervals are short. But if vomits are to be used, they should be given in the beginning of the disease, before repeated paroxysms have brought on inflammations, or too much dissolved the texture of the blood, taking care that the operation does not interfere with the fit, lest some sudden mischief should arise from the united shocks of the remedy and the disease."

If we except a few words, indicating a belief in the humoral pathology, the preceding advice and cautions are just such as might be expected from an enlightened pathologist of the present day. The only justifiable season for giving an emetic in intermittent fevers, must be at the very commencement, and in those cases only in which we have every reason to believe that indigestible substances, as of fruit and vegetable matters, have been taken and still remain in the stomach, a source of irritation and distress.

In reference to repeated evacuations, CLEGHORN, after telling us that he did not carry them as far as formerly, adds, that, as he seldom omitted to bleed and purge once or twice, he rarely repeated either operation oftener. He instances worms in the first passages, which sometimes accompany tertian fever, as another inducement for purging in the beginning. In other words, we are to empty the intestinal canal of the residue of digestion and other obviously foreign matters, which had not escaped, or had been long retained, before the coming on of the disease. Then, if it be clear of inflammation, we can give the bark immediately, with great advantage. If phlogosis be present in any part, we are called upon to bleed, either from the arm or by the application of leeches or cups over the affected part, and to repeat the operation as often as the symptoms continue urgent. The cinchonic preparations, in full doses, will then complete the cure. In all protracted cases of the disease, bleeding is of absolute necessity, if we desire to remove the sustaining causes, viz. either chronic inflammation of the liver or spleen, or of the gastro-intestinal mucous membrane, or sometimes all conjoined. The supervening of anasarca, abdominal dropsy, chronic bronchitis, or pleurisy, will demand similar treatment; and, until the local malady be removed, and the stomach clear of irritation, (of which we shall find the evidence in a tongue moist and divested of preternatural redness,) we cannot hope for any good from the bark and its kindred preparations. On the contrary, painful and protracted disease, variously masked, will too often be the consequence of their exhibition, where these rules are disregarded.

It is, perhaps, due to those who are sceptical of the value which ought to be attached to inferences from the phenomena of a disease, and its analogies to others, to mention that the principles and practice, which I have deemed it my duty to lay down in the treatment of intermittent fever, have been tried by the test of a tolerably long period of successful experience. Independent of the opportunities for observation of anterior date, my situation for the last eight years as a physician to the Philadelphia Dispensary, has rendered it necessary for me to treat hundreds of subjects of this fever, from all regions and of all ages, to say nothing of the no small number of cases in private practice, scarcely less varied in their symptoms and complications.—*North American Med. and Surg. Journal.)*

PATHOLOGICAL PHRENOLOGY.

Contributions to Pathological Phrenology. By H. H. Holm, Esq., Lecturer on Phrenology in the School of Medicine, London Hospital.

Case I. On Tuesday, the 18th of August, 1832, I visited — Horsey, aged about thirty-four. On entering the room, I remarked extreme excitement of the whole system, so much so that all the muscles appeared to be slightly convulsed: he was not entirely incoherent, but laboured evidently under delusions, the purport of which seemed to be, that there were disturbances which either annoyed him or in which he considered it necessary to implicate himself. On examining the head, I was struck with the greater heat about the *region of circumspection*, namely, near the point of ossification of the parietal bones, which extended in a circle about four inches in diameter. This appeared very obvious to the two medical gentlemen who, besides myself, were present. We endeavoured to quiet him by kind conversation, and we agreed that the hair should be shaved off the heated region; six leeches applied on either side, (he being previously undressed, and reclining on the bed, with a view to his getting sleep;) and we ordered that afterwards the room should be kept dark and free from noise. Aloetic purgatives were prescribed, with a view to act on the lower bowels; and light diet, with a glass of port wine, allowed, he having been addicted to drinking.

Previous history. Was porter to the Royal College of Surgeons in London, and had been discharged for impertinence to one of the officers, who exercised, as Horsey thought, too great *military* authority. After his discharge, (or, according to his own statement, after he had sent in his resignation, on the plea of ill health, on which account his wages were continued for a month, during his stay in the country,) he went to his friends; but, not meeting with employment that suited him, he returned to town. For many days before his attack, he had been drinking large quantities of brandy and other spirits. He complained of his inability to sleep.

After a second application of the leeches, at an interval of two days, he gradually became more rational, and, by raising his hopes of being reinstated in his former situation, he was eventually restored to health.

In tracing the immediate causes of excitement, a due weight should be attached to the effect of the spirits he took; but they merely excited into more violent action those feelings of caution previously over active: and this case combines the partial disease and the inflammation of a *particular* portion of the brain.

CASE II. October 1832. J. B., about two months ago, during a violent thunder-storm, was standing at the garden door, when a flash of lightning so terrified him that he never appeared to recover from the fright. His father observed that the expression of his countenance changed, and never recovered its natural appearance, from that time to his death. His mother said that, from the period referred to, he became fractious, exceedingly timid, and had lost all the quickness he had previously manifested.

He was treated by his medical attendants for inflammation of the brain; but it appears that the symptoms were never effectually subdued. About five weeks before his death, (i. e. three weeks after the fright,) he was seized with a convulsive fit, which lasted five hours, and which was followed by hemiplegia; and, although the paralysis was relieved, he never completely recovered the use of the affected side.

On Friday last he became completely senseless, and died yesterday (i. e. Sunday) at twelve o'clock.

Autopsy. On stripping off the pericranium, there were seen distinct red lines along the course of the frontal and sagittal sutures; and the same appearance was noticed on the inner side of the bones, when the calvarium was removed. Serum was found effused between the membranes; and the vessels of the pia mater were more than usually filled, exhibiting the general appearances of inflammation. The convolutions of the anterior lobes were very soft, more particularly those lying on the central parts of the orbital plates of the frontal bones; so that, on lifting them up to divide the nerves at the base, the fingers penetrated them. The corpora striata, or great anterior ganglions, from which emerge the anterior convolutions, were also exceedingly soft; while the posterior ganglions, or optic thalami, and the convolutions proceeding from them, were of the natural consistence.

It should also be observed, that the child had, by continual scratching, produced a small wound at the lower part of the forehead, in the mesial line, where the convolutions were found most soft and altered in texture. (Query, was this the effect of the pain occasioned internally?)

Now, although on many children the fright would hardly be sufficient to account for the cause of so much mischief, it will appear more evident on relating the predisposing circumstances. The parents had previously lost a child from acute inflammation of the brain, about the same age (two years and a half), a period of life at which this disease is very frequent. The temperament of this boy was nervo-sanguine, and he shewed great cerebral activity. Before the immediate cause of this attack, he had been visiting at an aunt's, where he had been indulged, and the functions of the stomach had become deranged, so that the mother even suspected he had received some injury while from home.

This case appears to be in consonance with the physiology and structure of the brain, as shown by Dr. SPURZHEIM, and which affords the only satisfactory means of explaining the direct effects of the injury sustained, viz. loss of intellectual functions, combined with immediate injury to the convolutions belonging to the intellectual operations.

HERNIA.

Cases of Strangulated Femoral Hernia, in the St. Mary-le-bone Infirmary; under the care of Mr. STAFFORD.

CASE I. Eliza Robinson, æt. seventy, (a washerwoman,) of the middle stature, and ordinarily having good health, was admitted into St. Mary-le-bone Infirmary on the 4th of October, 1832, for a femoral hernia, which had been strangulated, as she stated, forty-eight hours. She had been subject to a rupture for twelve years, but never till now had there been any difficulty, when the bowel came down, of returning it. The tumor is about the size of a small orange, tense, irregular on its surface, tender on pressure, and is situated on the right side, under Poupart's ligament, in that space on the thigh which is immediately below the crural or femoral ring. The symptoms which she laboured under on her admission were, violent sickness; extreme pain and tenderness of the abdomen; an anxious countenance; a furred tongue; pulse 110, hard, small, and wiry; and, latterly, a constant vomiting of stertoraceous matter.—Ft. V.S. ad ℥xvj. (Blood cupped and buffed) warm bath, in which the taxis was carefully employed. Afterwards a tobacco injection (ʒss. to Oss.), and ice applied on the tumor. No beneficial effect was produced. The operation was performed at two P.M.

An incision was made one inch above Poupart's ligament, extending over the centre of the tumor to about two inches and a half outwards to the lower part of it. The fascia was divided, and the hernial sac exposed. What appeared to be the proper sac was opened, and a quantity of fluid (about half an ounce to one ounce) escaped. There were several adhesions, and it was with difficulty a director could be inserted under the membrane, which was divided up to Poupart's ligament. There was immediately beneath this apparent sac, a membrane covered with fat, and resembling omentum. The femoral ring could not be discovered, which, together with the adhesions, and the general appearance of things, led to the conclusion (for the part exposed had the appearance of intestine,) that the sac itself was not opened. For this reason, therefore, what appeared to be intestine was taken up between the finger and thumb, and it was discovered that the gut still lay beneath it. Another opening was cautiously made into this apparent sac, and immediately a tablespoonful of fluid made its escape. As in the last instance, there were firm adhesions, and the same difficulty occurred in passing the director under the divided membranes. There was still reason, as the femoral ring could not be felt incarcerating the gut, to suspect that the proper sac was not yet entered. The part beneath was again pinched up between the finger and thumb, and cautiously opened. A slight quantity of fluid escaped, and the intestine lay immediately below. The *proper* sac was now laid open completely up to the femoral ring, and the stricture causing the strangulation easily felt. A director was inserted, Gimbernat's ligament divided, and the gut, which was of a dark red colour, immediately returned.

The wound was dressed after the usual manner. Half an hour after the operation, she had seven or eight copious motions. Countenance less anxious; pulse ninety; tongue dry and furred. Still felt considerable pain in the abdomen.

Half past three P.M. Ordered twelve leeches to be applied on the abdomen; a fomentation.—Haust. Efferves. quartâ quâque horâ sumend. Fever diet.

Ten P.M. Pain of the abdomen much relieved; but there was tympanitis; pulse ninety, and rather feeble. To continue the effervescing draughts, and to apply a bran poultice over the whole region of the abdomen. In addition to fever diet, a pint of beef-tea.

5th, eight o'clock. Had some sleep during the night: pain subsided, but tympanitis the same. Pulse ninety, soft; tongue dry. To continue the medicine and bran poultice.

One P.M. Was seized with faintness and difficulty of breathing. Pulse seventy, and hardly perceptible.—Ordered ℞. Sp. Æther. Sulph. ♏xxv.; Sp. Lavand. comp. ♏xxv.; Syrup, ʒss.; Aq. Menth. Virid. ℥x. M. secundis horis s.

Four P.M. Faintness much relieved. No pain; pulse eighty, and stronger.

6th. Had a tolerable night. Bowels had acted once. Pulse eighty, and firm; tongue not quite so dry; tympanitis the same. Ordered an emollient clyster.

Two P.M. Clyster produced one copious motion. Tympanitis rather increased, and the form of the ribs, distended with air, can be distinctly seen. Ordered, ℞. Magn. Sulph. ℥i.; Sp. Æther. Sulph. ℥ss.; Mist. Ammon. Acet. ℥xi. M. fiat mist. sumend. ℥ss. 4tis horis.

7th. Bowels had been relieved twice. Good night; and in other respects much the same as yesterday. To go on in the same manner. The dressings were removed, and the wound was found to be united along its whole course, excepting for about half an inch at its upper part.

8th. Much the same as yesterday; tympanitis somewhat less; bowels had not been relieved; the wound looking well. Ordered ℞. Pil. Hydrarg. gr. iv.; Pulv. Rhæi. gr. vj. fiat pil. ij. h. s. s. ℞. Ol. Ricini, ℥ss. cras primo manes.

9th. Better in every respect than yesterday. Pulse seventy, but feeble; tongue moist, and less furred; wound healthy, but its lips had reopened between the ligatures. Ordered, ℞. Pulv. Cinchonæ, gr. xi.; Pulv. Zingiberis, gr. v.; Decoct. Cinchonæ, ʒiss.; Sp. Tnuioris, gtt. xxv. M. quartis horis s. Diet, fish; one pint of porter; red wine, two ounces.

10th. Considerably improved: tympanitis nearly gone; pulse and tongue almost natural; slight inflammation around the margin of the wound. The ligatures were cut and taken away, and the wound brought together by adhesive plaster. To continue the medicine; wine, one gill; and, in addition to the diet, one mutton chop.

From this time the patient progressively went on well: the wound healed on the 6th of November, and, when she could bear the pressure of a truss, she was discharged from the hospital.

Remark. The sac being divided into three layers, and containing fluid between each of them, is an extremely curious fact, and may be considered as almost an anomaly. It points out to us that there is no peculiarity which may not present itself in the operation for hernia, and that, whatever general rules may be laid down, we ought to be prepared for every deviation that may occur. This case is also interesting, by its showing the necessity of supporting the patient, both by diet and the administration of tonics, as soon as possible.

Case II. St. Mary-le-bone Infirmary. On November 11th, 1832, Frances Row, æt. sixty-six, a hard-working woman, and of a spare habit, was admitted into this hospital, with a strangulated femoral hernia. The tumor was about the size of an egg, very tense, and tender to the touch, and was accompanied with constant vomiting, and extreme pain and tenderness, on pressure, of the whole region of the abdomen. The intestine had been incarcerated twenty-seven hours. Bleeding, the warm bath, the taxis, and all the usual means, were employed without effect. The operation was performed at twelve P.M., and nothing remarkable was observed, excepting that, when the sac was opened, there was not more than a teaspoonful of fluid in it. When, however, the femoral ring was divided at Gimbernat's ligament, about a quart of serum immediately rushed down from the cavity of the peritoneum, and continued to flow so freely that the wound could not be dressed with adhesive plaster. Two ligatures were consequently employed, and a graduated compress, made with lint, bound down with a bandage upon it. After the operation, she was carried to bed, where she remained quiet for three hours, without taking any medicine. As the bowels had not then acted, and there was considerable pain in the abdomen, she was ordered, ℞. Magn. Sulph. ʒi.; Aq. Menth. Pip. ℥i. M. fiat haustus, omni horâ donec alvus responderit sumendus. App. hirudines xx. region. abdom. App. fotus comm. region. abdom. Diet, fever.

One P.M. Bowels had acted four times. Pulse ninety, and soft; tongue dry and furred.

Three P.M. Seized with very severe pain in the region of the heart, (an attack she had been before subject to,) accompanied with dyspnœa and faintness; pulse 130, feeble, and very irregular. Ordered, ℞. Liq. Opii Sedat. ♏ xv.; Sp. Æther. Sulph. ♏xxv.; Mist. Camphora, ʒx. M. statim s.

Four P.M. Somewhat relieved.—℞. Mist. Æther. comp. ℥i. 2dis horis s.

Ten P.M. Much relieved: pain almost gone; pulse 100, regular, but feeble.—To continue the medicine during the night.

13th. No pain. Bowels had not acted.—Emuls. Ol. Ricini, ℥ij. statim s. Operated four times.

14th. Better: no medicine required.

15th. Had had no sleep during the night, but was no worse. Pulse 100, and soft.

Vespere. ℞. Liq. Opii Sed. ♏xxx.; Mist. Camph. ℥i. M. h. s. s. Rep. Haust. Ol. Ric. cras primo mane s.

16th. Had slept well; pulse ninety, and low. After the bowels had acted, to take, ℞. Cinchonæ pulv. gr. xij.; Zingiberis pulv. gr. v.; Decoct. Cinchonæ, ℥iss.; Sp. Ammon. A. gtt. xxv. M. quartis horis s. Diet, one mutton chop; wine, one gill; porter, half-pint.

The case, from this time, with the exception of a slight return of the pain in the abdomen, (for which leeches were once applied,) went on favorably. She was enabled to take nourishing food, and gathered strength under the tonic treatment. The wound soon healed; but she could not wear a truss as soon as she otherwise might have done, in consequence of the cicatrix remaining tender. She was discharged from the infirmary quite well.

Remark. The remarkable points of this case were the sac containing so little fluid, while so large a quantity (showing the completeness of the strangulation of the gut,) rushed through the wound from the cavity of the peritoneum. It shows also, as in the last case, the benefit derived from the early administration of tonics and nourishing food.

Case III. Elizabeth Appleby, æt. fifty-three, was admitted into St. Mary-le-bone Infirmary, at one P.M. on 3d December, 1832, with a large tumor, situated on the right thigh, immediately below Poupart's ligament, about the largeness and shape of a moderate sized melon. The history she gives of it is as follows: about eight years ago, she was operated upon for a strangulated femoral hernia, and then was advised to wear a truss, and cautioned never to let the rupture come down. At first, with the exception of once or twice, she was enabled to do this; but latterly, within the last two years, she has been obliged to work very hard, in consequence of which, the truss became ineffectual, and she could not prevent an occasional protrusion of the bowel. At these times the tumor presented has been very great, but not so large as at present, and, by lying down on the back, it has generally, of its own accord, gone up again in a few hours. She states that the day before her admission, she took a very long walk, which fatigued her extremely, and during which the rupture came down, and has remained so ever since. She is now suffering great pain in it, as well as in the abdomen; is constantly vomiting, and having also a quick hard pulse, dry tongue, and a distressed anxious countenance.

At two P.M. She was placed in a warm bath; and, when faintness was produced, the taxis was employed with the greatest care. No impression, however, could be made upon the tumor: it remained of the same size, and, as so much pressure might increase the inflammation, by which the chance of success of the operation, if necessary to be performed, would be rendered less, she was carried to bed, and other remedies employed. Ordered Enema Sodæ Sulph. immediately, and the application of ice on the tumor.

Nine P.M. Just the same in every respect. A tobacco (ʒss. to lbss.) injection. The taxis again carefully employed.

Eleven P.M. All the remedies had failed, and it was found necessary to propose the operation, as the only chance of saving her life. She would not, however, after every persuasion had been used, consent, saying that, when purgatives had been administered on former occasions, it had always gone up, and she had no doubt, if they were employed, it would do so now. She was consequently ordered, Ol. Ricini, ʒiv. quartâ quâque horâ s. To continue the application of ice for an hour or two.

4th, eight o'clock. The bowels had not acted; extremely miserable night; violent pain in the tumor and abdomen; sickness the same; pulse 130, tongue dry and cracking, with constant thirst.

Two P.M. The pain in the tumor has considerably increased. It is larger even than yesterday, in consequence, most probably, of the contents of the incarcerated intestine having been decomposed; and thus, air having been disengaged, it has become more distended. It is now extremely hard and shining, and of a purplish cast, from venous congestion. It occupies the whole space from the pubes to about two inches from the spine of the ilium, and, on its inner side, it extends itself into the right labium, and its upper extremity tilts itself over, and is considerably above Poupart's ligament: in fact, as it has been described before, it resembles a large melon. The patient, in the last extremity, consented to the operation; which was accordingly performed at four o'clock P.M.

An incision was made about three inches in length, longitudinally, on the upper part of the tumor, leaving the lower part untouched. The sac, which lay at least half an inch beneath, in consequence of the œdematous and thickened state of the integument covering it, was opened, and a considerable quantity of fluid escaped. A large mass of intestine, inflated with air, apparently about two yards in length, was exposed. The sac was entirely divided up to the femoral ring, and the strictured part, which prevented the reduction of the hernia, appearing to be chiefly at Poupart's ligament, was cautiously divided by Cooper's knife. An attempt was made to return the intestine, but without success: Gimbernat's ligament was, therefore, divided, and the strictured ring was now freely open. At this time, (as, indeed, had been the case during the whole operation,) the patient was violently retching. The diaphragm and the abdominal muscles, therefore, were in constant action. From this cause there was great difficulty in returning the bowel into the cavity of the abdomen; for, as fast as it was thrust in, the action of these muscles forced it out again. The patient at length began to be faint, and they became passive. The gut, the peritoneal coat of which was highly reddened, was now easily returned. The wound was dressed in the usual manner, and a firm thick graduated compress was laid over it. The patient was carried to bed, and left quiet for three or four hours.

Eight P.M. She was suffering great pain in the abdomen, with extreme tenderness; the sickness had abated; pulse ninety-six, hard and full. Ordered, Fiat V. S. ad ℥xxiv.; Fot. abdomin. ℞. Magn. Sulph. ʒi.; Inf. Rosæ, Menth. Pip. *aa* ℥ss. M. omni horâ sumendus donec alv. respdt.

Ten P.M. Pain still considerable: bowels had operated three times. Ordered, App. Hirudines xx. region. abd.; Cataplasm. furfuris..

5th. Pain nearly gone; pulse one hundred, and soft; tympanitis; tongue dry; extreme thirst. Ordered, Haust. Efferves. quarta quâque horâ s.

6th. Had a tolerable night. No pain; tympanitis the same; pulse ninety, and not so strong; tongue the same, and thirst still great. To continue the effervescing draughts. In addition to the diet one pint of beef tea, and two ounces of red wine.

7th. Much the same as yesterday. Ordered, ℞. Mist. Cinchon. arom., Aq. Menth. Pip. *aa* ℥ss. M. quartâ quâque horâ sumendus.

8th. Still weaker; in other respects much the same. Occasionally feels faint, and is very restless and oppressed. ℞. Mist. Cardiac. ℥iss. quarta quâque horâ s. ℞. Liq. Opii Sedat. ♏ xxv.; Mist. Camph. ℥i. M. fiat haust. h. s. s.

9th. Much worse; diarrhœa, with extreme lassitude, pulse ninety, and feeble.

From this time she gradually sunk, and died on the 12th, being ten days from the time the operation was performed.

On examination of the body twenty-four hours after death, the thoracic viscera were found healthy. The liver, the stomach, and spleen were healthy. Two yards and a half, by measurement, of the small intestines were blackened, and in a semi-mortified state, not entirely having lost their toughness, and yet could be torn by a little force. The mucous surface was ulcerated, and the peritoneal coat, in various parts of it, was thickly covered by purulent lymph. A large semi-cartilaginous tumor, about the size of a citron, was found in the uterus; and the other parts were healthy.

Remarks. This case points out to us the necessity of performing the operation as soon as possible; for, had this patient submitted to it when it was first proposed to her, it is most probable she would have recovered. The immense portion of intestine contained in the sac is, perhaps, unparalleled in femoral hernia, and it can only be accounted for by the operation having been performed before, in consequence of which the femoral ring was enlarged beyond its natural size. The difficulty of returning the gut arose partly from its great bulk, partly from its being distended with air, and partly from the constant action of the diaphragm and abdominal muscles: had the intestine been unreturnable, it would have been advisable, perhaps, to have punctured it with a needle, and let out the air when it would have been easily effected.

Case IV. St. Mary-le-bone Infirmary, December 23d, 1832. Ann Baker, æt. forty-nine, an emaciated, unhealthy looking woman, states that she has had a rupture for several years, and has constantly worn a truss for it. In spite of this instrument, however, a portion of intestine has occasionally protruded itself through the ring, but has always gone back again without difficulty. According to her own account, the bowel has now only been strangulated four hours, but, from the previous symptoms and the state of the part when operated upon, it is probable it has been down for a longer period. On Saturday she felt pain in the part; and on Sunday, the day of her admission (about one o'clock,) she was seized with constant sickness, which she attributed to having eaten pork, and which continued without abatement until the present time (half-past ten P.M.) The tumor is about the size of a turkey's egg, elongated from the pubes towards the anterior superior spine of the ilium, is extremely tense, very painful and tender on being touched, and tilting over Poupart's ligament. Her present symptoms are, extreme pain in the abdomen, with tenderness on pressure; constant retchings; anxious countenance; pulse ninety-six, hard, and wiry; and a dry furred tongue.

She was bled to sixteen ounces; placed in the warm bath; the taxis employed; and purgative injections thrown up the rectum; but the tumor remained of the same size. The injection brought away a large quantity of feculent matter; in consequence of which, (about half-past one in the morning,) she was again placed in the warm bath, and the taxis again employed. No favorable result ensued; the tumor remained as tense and painful as before, the sickness and pain of the abdomen continued. The operation was consequently performed.

An incision was made, by pinching up the integuments over the tumor, and thrusting a double-edged scalpel through it at its base and cutting out, immediately opposite to the centre of the femoral ring, and extending to about two inches in length. The parts were cautiously dissected down to the sac, which was opened and divided up to the femoral ring. The sac contained a large piece of omentum, and a dark chocolate colour knuckle of intestine, which was of about three inches in length, lying immediately beneath the latter. The stricture was divided at Gimbernat's ligament, and the gut easily returned. The omentum, however, was firmly adherent to the mouth of the sac. An attempt was made to break down the adhesions, some of which yielded, but the whole of them could not be torn through. As the patient was not in a state to lose much blood, in consequence of having a disease of the heart, and as the portion of the obtruded omentum was supplied by several large vessels, which it might be difficult to tie, a ligature was tightly placed round it at its base, and it was then cut off. The separated portion of omentum measured in breadth four inches and three fourths, and in length three inches. The wound was brought together by one ligature and adhesive plaster, and a compress was applied.

Immediately after the operation, the sickness was relieved, and the pain gradually subsided: she was seized, however, with a slight rigor. ℞. Liq. Opii Sed. ♏xxx.; Mist. Camph. ℥i. M. fiat haust. statim s.

24th. She had had, during the night, three pretty copious motions; is free from pain; no sickness, and disposed to sleep.

Six P.M. Felt severe pain on the right side of the epigastric region with tenderness; pulse ninety, hard and wiry. Ordered App. Hirudines xv.

Eleven P.M. Was much exhausted from the leeches. Pulse 120, very feeble and indistinct; pain relieved. Ordered Enema emolliens statim inj. ℞. Ammon. Carb. gr. v.; Sp. Æther. Sulph. m. xij.; Mist. Camph. ℥i.; Tinct. Amm. C. ʒi. M. fiat haust., quartâ quâque horâ sumend. Wine two ounces, to be taken occasionally in water.

25th. Had slept well during the night. Now and then felt slight pain in the abdomen; pulse one hundred, stronger, and more distinct; tongue moist and slightly furred. Ordered Haust. Ol. Ricini. statim s. Foment. commun. abd. Rep. Enema.

Three P.M. Feels pain in the abdomen; tender on pressure. App. Hirudines xij. abdomen. Rep. Haust.

Ten P.M. Much relieved. Feels very faint and low; pulse 115, very feeble, and indistinct. Bowels had acted four times. Ordered one ounce red wine in arrowroot, some of which to be taken occasionally during the night. Rep. Haust. Ammon. Carbon. ℞. Ext. Papav. alb. gr. vj.; Pil. Hydr. gr. iv. fiat pil. ij. statim s.

26th. Had a very comfortable night, having slept several hours; no pain; pulse one hundred, more full and distinct; tongue moist and less furred. Wound dressed and looking well. Ordered, ℞. Pulv. Cinchonæ, gr. xi.; Pulv. Zingib. gr. vi.; Dec. Cinch. ℥iss.; Sp. Tenuioris, gtt. xxv. M. quartâ quâque horâ sumendus. Rept. pil. h. s. s. Beef tea, one pint; wine, two ounces, daily.

From this time the case went on favorably.

27th. Much better; had a good night; no pain; bowels relieved three times; enjoyed the beef tea and feels stronger; pulse one hundred, and firmer. To continue Haust. Cinchon. Arom. et Pil. Papav. h. s. s. Wound looking well, but the tied omentum not come away.

28th. Going on well in every respect, excepting having retention of urine. Catheter to be passed night and day. To go on in the same manner. Three pints of beef tea.

30th. Going on favorably; pulse ninety; tongue moist and clear. To continue medicine. In addition to the present diet, two eggs daily, four ounces of fish.

31st. Still improving; pulse eighty-four. Ordered one mutton chop, half a pint of porter. Cut surface of the omentum granulating, and filling up the femoral ring. On the following day, the diet was increased to two mutton chops, one pint of porter, one gill and a half of red wine; she continued the bark. The ligature was taken away on the 13th, and the wound was healed on February 2d, the granulations of the cut surface of the omentum, and those of the wound itself, having united and skinned over.

Remarks. It has been a disputed point among surgeons, when the omentum cannot be returned, whether it should be cut off or the vessels tied, or whether a ligature should be placed at its base, and then cut away? The general opinion is, that it should be removed and the vessels tied, with the view of preventing subsequent inflammation of the peritoneum, and the possibility of secondary hemorrhage. In the case before us, it was not advisable, because, if any difficulty had arisen in tying the vessels, so much blood might have been lost, that the patient, having a disease of the heart at the time, and a very feeble pulse, might have sunk under the operation. It shows, therefore, although the application of a ligature on the omentum may be against the generally received opinion, that it may be done under peculiar circumstances, without much apprehension of future evil consequences.

HEMORRHAGIC DISEASE.

Case of Hemorrhagic Disease, following Venesection after Amputation, and finally terminating in Purpura. Read at the Harveian Society, on January the 21st, by ALEX. ANDERSON, Esq., one of the Surgeons of the Western General Dispensary.

JANUARY 31, 1831. Richard Crawford, aged thirty-nine, of phlegmatic temperament, was admitted a patient of the

Westminster General Dispensary, with disease of the right wrist, of six years' duration: this had originated from a sprain; inflammation supervened, and its consequences, suppuration, caries, and hectic fever, finally demanded the amputation of the wrist.

November 5, 1832. Amputation was performed half-way up the forearm. Three arteries being tied, the bleeding ceased. The stump was dressed in the usual mode. He bore the operation well, and without faintness. I was about to take my leave, when, upon his exerting himself somewhat, hemorrhage took place, and increased so much and so rapidly as to render it imperative to search for the bleeding vessels: two were discovered, and secured, upon which the hemorrhagy ceased; but, after the lapse of a few minutes, there was an oozing, then a gush, from another vessel, which it was necessary to tie also. The stump was become much heated, and the action of its arteries remarkably violent. These, in connexion with another circumstance that occurred some weeks before, namely, an astonishing profusion of blood, which followed venesection on the back of the diseased hand, prepared me to expect further hemorrhage: it was, therefore, determined, if such should ensue, to repress it by the constant application of a cold solution of alum, to keep on the tourniquet, but slackened, as a ready help; to use no dressing besides a strap of adhesive plaster, and a pledget with spermaceti ointment, for the support of the wound; and to give full doses of the tincture of foxglove. Notwithstanding, a smart hemorrhage did take place next morning, and rather more than half a pint was lost before the tourniquet could be commanded. This seemed to have been induced by two causes: the getting out of bed, and a temporary excess of excitability of the heart and arteries; for, upon resuming his quiet posture in bed, and the abatement of the flush, the tourniquet was slackened, without any further hemorrhagy.

During five days there continued to be occasionally slight oozings of blood, which were always attendant on a flush and quickened circulation; and, but for the assiduous attention to rest, cold applications, and the use of the tincture of foxglove, would doubtless have become more frequent and greater in quantity.

The granulations were of a livid hue, and exceedingly disposed to bleed, up to the completion of the cicatrix, which was within three weeks from the day of the operation.

Upon examination of the diseased wrist, the cartilages of the joint had completely disappeared; the carpal bones separated and carious; the ligaments in some places absorbed, in others vastly thickened.

January 10th, 1833. Up to the present date, his health has continued to improve: he has become robust, works hard at the mangle, and is carrying out heavy loads of clothes; his wife being a laundress. Nothing worthy of remark occurred, except a patch of erythema near to the cicatrix, which came and was gone within the space of three days; and certainly nothing was further from my thoughts than that the hemorrhagic disposition was to be so soon and so awfully manifested as I am now about to relate.

January 11th. He had been seized the previous evening with vertigo, rigor, severe headach, and pains in the small of the back. His appearance is exactly that of a person in measles, on the first day of the eruption: there is tumidity of the face and neck; much coryza from the eyes and nostrils; cough; quick respiration; and a distinct eruption upon the extremities. He had had measles. The pulse was quiet and under ninety. Two opening pills and diaphoretic medicine (Liq. Ammon, Acet.) were prescribed.

January 12th, two o'clock. During the night he had vomited every thing he swallowed, and mixed with blood; and, since early this morning, had been purging every half-hour, indeed, more frequently, almost pure blood. The flush had changed to a lividity of the skin. The surface of the trunk and arms is thickly beset with spots of purpura, of the size of a split pea; some of them are pink or florid, others of a deep lead colour or purple. On the face and lower extremities they are not so numerous. His wife first discovered the spots about nine this morning, on one side of the neck. The mucous membranes were quite as congestive as on yesterday, and, from the dark colour of the blood-vessels of the conjunctiva, the eye had a very death-like appearance, the gums were of a lead colour inclining to purple, the tongue covered with a thick milk-like coating, breathing very much oppressed, with much phlegm, which he expectorated easily. The vision, hearing, and touch were much impaired; not so his mental faculties, these he exercised perfectly when he heard what was said to him. The pulse varied much in rapidity and in strength, at times almost imperceptible, from 100 to 120. I bled him from the arm to the extent of eight ounces. After this operation he expressed himself relieved, he could distinguish objects more clearly, and could hear better. Upon inspiring deeply, he experienced no pain;

the respiratory murmur distinctly audible. The actions of the heart feeble. Had passed little or no urine. He did not appear to suffer much from thirst, as a very little bit of orange satisfied him: indeed, I had sent for some oranges, intending that he should partake of their juice liberally, but this, like every thing else, was quickly vomited along with blood.

Ten P.M. He has been dead two hours; had passed no urine since last visit. The spots were less distinct, becoming diffused, and presenting the appearance of ecchymosis. The blood drawn at the last visit had a remarkable appearance. I had noticed how very quickly the crassamentum subsided from the serum, and I did expect to find buff on the surface; but there was no buff. The serum was jellied, resembling very weak size; the red crassamentum occupying the bottom of the vessel was fluid as molasses. The remedies prescribed were V.S., ad ℥viij. orange juice, and effervescing medicine with an excess of acid.

January 13, half-past two. The body was examined. The spots were become less distinct, all around them was extremely livid from ecchymosis. The neck tumid and livid. The right side of the chest flattened, and non-resonant. Upon opening the body, the blood was found to be fluid everywhere, and very dark coloured. The pleura of the right side was so adherent as not to admit of separation without the knife, throughout the whole extent of the pleura costalis; the subjacent lobe of lung was condensed; the other two lobes, with their investing pleura, were healthy. It may be remarked, that he had a very narrow escape fifteen years ago from a severe attack of pleurisy. The lungs of the left side healthy, strictly speaking, perhaps somewhat emphysematous. In the pleura of this side about half a pint of serum tinged with blood, whether from the diseased action, or from the division of some vessel by the knife, may be doubted. The lining of the air tubes was much reddened, the heart quite healthy. The liquor pericardii perhaps superabundant. Spots of purpura, varying in number and in size from that of a pin's head to a split pea, were found throughout the whole mucous surface of the stomach and intestines, and upon the peritoneal coat of the termination of the ilium and commencement of the colon. The other viscera were of healthy appearance.

In the brain nothing remarkable beyond the fluidity and dark colour of the blood. On the third day after death, the spots could with difficulty be defined; their purple tint and that of the skin is changed to pink. A corresponding change had taken place upon a portion of skin which I had brought away to examine through the microscope.

Upon examining the spots on the mucous surface through a very powerful magnifying lens, they appeared to consist of a congeries of very loaded vessels with inconsiderable surrounding extravasation, and, on making a section of the spots on the skin, they presented to the unaided eye a similar arrangement.

My colleague, Mr. Barker, assisted me during the operation, and Dr. Marshall Hall, the physician to the Charity, was present at the post-mortem examination.

CRITICAL ANALYSES.

Quæ laudanda forent, et quæ culpanda, vicissim,
Illa prius, cretâ; mox hæc, carbone, *notamus.*—Persius.

A Treatise on the Diseases of the Liver, and on Bilious Complaints; with Observations on the Management of the Health of those who have returned from Tropical Climates, and on the Diseases of Infancy. By George Hamilton Bell, Fellow of the Royal College of Surgeons, Edinburgh; late residency Surgeon, Tanjore.—8vo. pp. 152. Bell and Bradfute, Edinburgh; and Longman and Co., London.

Diseases of the liver, not only in our eastern possessions, but even here, have gradually assumed a character of vast importance, and hence demand from the medical practitioner a corresponding degree of attention. Whether it be, from fashion, that hepatic disorders are more noticed now than formerly, or whether, as we suspect with our author, that they are really more prevalant than they used to be, we shall not attempt to determine: still we cannot but allow that "the supposition is not without plausibility, which avers that something like an intertropical tendency to liver complaints may have been imported into this country:" for, as our author observes,

"The sources of what are usually termed hereditary diseases may often be traced to some misfortune, neglect, or imprudence in a predecessor. Thus the habits of living of a father, a grandfather, or even of some more remote ancestor, or a cold which he has neglected, may have engendered the gout, or the consumption, under which his descendants suffer. So it is well known that every one who has been much exposed to a hot climate acquires a predisposition to hepatic affections; and when we remember the number of our countrymen, or of their descendants, who annually return from the intertropical possessions of Britain, labouring under the diseases of the climate, and become fathers of families; or who themselves suffer during the remainder of their lives under the morbid affections which they have brought with them, we shall have no reason to be surprised at the diffusion and very general prevalence of diseases, which have not hitherto been regarded as indigenous in the temperate zones.

"It is also possible that the present habits of life in Great Britain, and in particular the increase and more general diffusion of luxurious living, may have produced a greater tendency to biliary derangements than naturally belongs to our climate. But be the cause what it may, it cannot be denied that the liver is daily becoming more prominent as a source of disease in this country: and no general medical practitioner, therefore, can safely be ignorant of the intertropical practice in hepatic disorders. In my own practice, since my return from India, I have derived great benefit from keeping my attention steadily fixed on the condition of the liver and duodenum; so much so, indeed, that I feel the less apology to be necessary for the present attempt to communicate to the profession the result of the observations on this class of diseases, which I have now had opportunities of making, both in India and in Great Britain." (*Pref.* vii.)

Such is the praiseworthy object of the present treatise, an object which its author has very ably achieved: for, though short, (all extraneous matter being excluded,) it is comparatively copious, and, though concise, it is (as far as an isolated treatise can be) complete.

We like the plain, straight-forward style in which this work is written; no mystification, no labouring after effect; but diseases are so graphically pourtrayed that the descriptions bear the impress of truth, and carry conviction to the reader's mind that the writer is familiar with the topics on which he treats.

Dr. BELL's experience has led him to distinguish at least two kinds of acute hepatitis, which he denominates *sero* and *puro-hepatitis;* and this distinction appears to be not only pathologically, but practically important. The following are part of the "preliminary observations" on this subject.

"Such cases as the following have each received the name of acute hepatitis. An intertropical sportsman has been much exposed to fatigue; he has been snipe-shooting during the heat of the day, under an unclouded sun, and up to his knees in water. He is suddenly seized with excruciating pain in the right hypocondrium. As if struck with the sun, he is unable to move, and is carried to his quarters in a litter. He is found to be in a state of high fever; and his right side is so exquisitely painful that even the weight of a single sheet is hardly endurable. Forty ounces of blood are drawn from his arm, and thirty leeches, followed by a large blister, applied to his side; and by pursuing a well-managed course of antiphlogistic treatment, he is in a few days restored to health—resolution has been accomplished. Or, if the result prove less favorable, there will remain weight and uneasiness in the side, and he will become a tropical valetudinarian; adhesion, in this case, having most likely taken place between the covering membrane of the liver and the peritoneal lining of the diaphragm, or abdominal walls.

"Again, a man is attacked with shivering, followed by feverish symptoms, which are relieved. His illness is pronounced to be a 'bilious attack;' but his tongue is white, his pulse tense, and his bowels irregular; and after eight or ten days he is again attacked with shivering. The case is supposed to be one of irregular ague, and he is treated accordingly. His countenance now assumes an earthy hue, and he is evidently in a state of bad health. But he is told that 'a course of tonics, and aperients, and change of air, will set all right.' He travels by easy stages to the sea-coast, becomes worse on the road, and, by the time he reaches the end of his journey, is obliged to confine himself to bed. His pulse is now stationary at 120, he has a clammy skin, a dirty soddened tongue, his bowels are in great disorder, and although he probably has severe spasmodic twitches in the abdomen, there is nowhere any fixed pain. This goes on for some days, the patient settles down on his back in bed, his skin becomes clammy and wet, he falls into a state of low delirium, and dies from effusion in the brain. An abscess containing some pints of matter is found in the centre of his liver.

"It is cases such as these, and every practitioner must have met with them, which have led me to the conclusion that inflammation, when seated in diaphanous membranes, or in parts in which the healthy circulation consists of colourless blood, differs in symptoms, course, and termination, from the same affection when it occurs in parts in which the vessels, when in health, convey red blood. The distinction I regard as of sufficient practical importance to justify the subdivision of phlegmonous inflammation into what may be termed sero-phlegmon and puro-phlegmon; to which may be added muco-puro-phlegmon; the first making its attack on naturally colourless parts, and possessing all the characteristics of inflammation, viz. unnatural redness, heat, pain, and swelling, and having a tendency to end in effusion of serous fluid; the second being that affection in those vascular parts in which, the healthy circulation being already red blood, there is little or no apparent change, no great increase of heat, in which the pain when present is obtuse, and where there is a tendency to the deposition of pus; and the third attacking mucous surfaces, in which there are pain, heat, swelling, and unnatural redness, terminating in change of secretion and ulceration." (P. 7.)

"The symptoms, then, of sero-hepatitis are acute pain, referable to some part of the surface of the liver; pain over the clavicle; difficulty of breathing; dry cough; high fever; great thirst, and irritability of the stomach and bowels; urine high coloured, depositing a lateritious sediment; with pain much increased on pressure, and by attempts to lie on the left side." (P. 16.)

"*Treatment.* It is with a view to this, the most important object in an inquiry into the nature of disease, that I have ventured to propose that a line of distinction should be drawn between inflammation of the coat of the liver, and inflammation in its substance. For it seems to me that a due regard to that distinction may enable us to reconcile the difference of opinion which exists among good practitioners as to the treatment of acute hepatitis.

"The sanative effects of mercury in functional affections of the liver, and in diseases within its substance, may be regarded as established; but many physicians, particularly in this country, are of opinion that mercury ought not to be exhibited in acute hepatitis: and, so far as my own experience goes, I have not found it necessary, in sero-hepatitis, so long as the disease is acute, to put the system under the influence of mercury. I have reason, indeed, to believe, that much harm may arise from 'pushing mercury' in cases in which the acute inflammation is confined to the covering membrane of the liver; and of this the following case supplies an illustration.

"Several years ago, while in India, I was called to a station at some distance from my own, to see a civilian of high rank, who was considered by his medical attendant to have fallen into a state of great danger from an attack of hepatitis. This patient had been about twenty years in India. I found him in a state of low delirium, with an alarming tendency to dosing; his pulse was upwards of 120, thrilling and weak; his face swollen to double its natural size; and his mouth, throat, and tongue, in a terrible condition from ptyalism. I was told that he had been suddenly seized with excruciating pain in the right side, with fever, and all the other symptoms of acute hepatitis; that he had been very largely bled generally; that local depletion with leeches had been carried as far as possible; and that he had also been blistered. By those means it appeared that the pain had been completely removed from the side. Calomel had likewise been administered to a great extent; and the mouth had suddenly become affected, attended with great pain. The swelling of the mouth, tongue, and throat had increased to the state in which it was when I first saw the patient; but the pain had suddenly ceased, and delirium and comatose symptoms had supervened.

"The hepatic affection having been thus to all appearance mastered, the dangers now were sphacelation of the mouth and throat, and cerebral effusion. We therefore turned our whole attention to the head and circulation. But every attempt to lower the pulse failed, and the delirium, though it intermitted, was not manageable. The patient sunk and died; and, on examination after death, the liver was found perfectly sound. The inflammation had been overcome by the decided antiphlogistic practice pursued; and although the exhibition of mercury was according to rule, the case was not, in my opinion, one which called for the exhibition of mercury as a sialogogue; and the patient had perhaps been too long exposed to an Indian climate to admit of even the necessary depletion with safety, far less the deleterious effects of 'pushing large doses of calomel.'

"In the treatment of sero-hepatitis, it is not necessary to put the system under the influence of mercury. The extreme irritability of the stomach may render the exhibition of a scruple of calomel necessary; and this medicine is valuable in combination with purgatives. But salivation is in my opinion uncalled for, and may, as in the above case, become positively injurious in acute sero-hepatitis.

"The objects to be attained are, 1st, to weaken the general force of the circulation; 2d, to allay the irritability of the stomach; 3d, to overcome the morbid condition of the capillary vessels; 4th, to act on the bowels; and, 5th, to equalize the circulation, and allay morbid irritability." (P. 17.)

Local bloodletting is much recommended by Dr. Bell, and seems, in Indian constitutions, to be often a more safe and efficient practice than general depletion. The following, however, may not be a useless caution to English practitioners, on their first arrival in India.

"In India, leeches are a most efficacious means of accomplishing depletion; for the tropical leech is not only so large as to be capable of containing from one to two ounces of blood, but it leaves a wound more like that of a bayonet than a leechbite; so that a dozen or twenty leeches will not only draw a great quantity of blood, but will do so with wonderful rapidity,* Having, therefore, bled freely with the lancet, exhibited a large dose of calomel, &c,, a dozen or twenty leeches ought to be applied over the region of the liver, and their removal followed by a lengthened fomentation." (P. 22.)

"*Puro-Hepatitis.*

"*Symptoms.* The condition of the hepatic vessels which leads to suppuration in the substance of the liver, seems to be so little different from their usual state (at least so far as is indicated by symptoms), that very frequently the first intimation which a patient has of serious disorder of the system, is what is too often to be reckoned proof of the formation of an abscess. He is attacked with a shivering fit, which is followed by an irregular hot stage, ending in profuse clammy perspiration. Even after this there may be no symptoms pointing out the destruction which is going on in his liver. The patient suffers from irregular feverish symptoms, and has the impression that something very wrong is taking place; but neither he, nor probably his medical attendant, is aware that he is stricken with a mortal malady. As the case advances, there are occasional severe shivering fits, and distressing night sweats, the pulse rises, the tongue is furred, and, from the appearance of the patient's countenance, it is evident that he is labouring under some great internal disease. Still there may be no symptom referable to the liver; great derangement of the bowels ensues, and there is much suffering from dyspeptic symptoms. In some instances there are severe spasms in the diaphragm, and violent tenesmus. After some days (or it may be even weeks) the patient is attacked with low delirium, and dies as if from effusion in the brain. This is an extreme case.

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* "A very dangerous case of exsanguination occurred in the Indian practice of a young friend of mine. Accustomed to the leeches of a London hospital, he had ordered the application, to the knee of a robust man, who had suffered a fall from his horse, of as many leeches as would adhere. Upwards of forty of the large Indian leeches were applied, and before one had dropt off the man fainted, and could scarcely be reanimated."

"In the less obscure cases there are fulness, weight, and uneasiness in the right side, increased on pressure. There is pain in the right shoulder, or in the back; there is a dry cough, the stomach is disordered, and the bowels much deranged; and though the pulse may not be materially affected, there are alternate aguish and and feverish symptoms. There is urgent thirst, the tongue is furred, and the urine high coloured, depositing a lateritious or pinky sediment. There is great risk that these symptoms will soon be followed by decided indications of the formation of an hepatic abscess.

"Cases occur in which very extensive abscesses have appeared to form very rapidly, death ensuing within eight or ten days after the accession of symptoms of acute sero-hepatitis, and in which it has been found, on the post-mortem examination, that one or more extensive abscesses had formed in the substance of the liver. I am persuaded that in all such instances the abscesses had formed insidiously and unnoted; and that the symptoms which had forced themselves into notice were those produced by the inflammatory action having extended itself to the peritoneal covering of the liver.

"In other instances the hepatic affection has been first detected by the patient finding that he could not endure the weight of his watch in his waistcoat pocket, or that the pressure of a friend's hand while leaning on his arm has produced a sickening uneasiness. Such slight symptoms of morbid sensibility in the region of the liver have been soon followed by melancholy evidence that suppuration had taken place in that organ." (P. 30.)

Of the insidious advances of this form of disease, several very instructive illustrations are detailed; but at these we can only slightly glance.

"Mr. Assistant-surgeon H—, a stout man, about thirty-five years of age, arrived at Tanjore on the 25th of March, 1826, in attendance on the late Bishop Heber. He went to church on the following day, Good Friday, made a round of calls, and dined at the Residency. On calling for him on the forenoon of the 27th, I found him confined to his sofa. He told me he had a slight feverish attack, but that he expected his usual dose of oil, which he had taken, would put him to rights again. As his hand was hot and dry, and his pulse quick, I advised him to take some tartar-emetic solution. He objected to this, but agreed to take a dose of compound powder of jalap. When I saw him in the evening, I found him still feverish; his bowels had been opened, bnt the evacuations, though apparently bilious, were fetid and unwholesome. I prescribed effervescing draughts, and gave him at bedtime six grains of calomel with some James' powder, prescribing the black draught in the morning." (P. 32.)

The treatment during some days being chiefly a combat with symptoms, no accurate diagnosis being made, we pass on to the closing scene.

"4th April. I sat up with Mr. H. the greater part of the night. I continued to administer calomel combined with opium, of the latter of which, in the course of the night, he had four grains; and I also gave him, in hopes of keeping down the pulse, thirty drops of the tincture of digitalis in different doses.

"Mr. H., though prepared for death, thought that he had been reduced in former illness to a state of more imminent danger, and was persuaded that he owed his life to the perseverance of his then medical attendant, in giving him wine and nourishment; and he requested me to act in a similar manner. I therefore continued, until he could no longer swallow, to administer wine, &c. Mr. H. retained his consciousness until two o'clock in the afternoon, and died a little after four.

"*Sectio cadaveris.* An abscess, containing upwards of a pint of matter was found in the great lobe of the liver, on the point of bursting into the abdomen. It was seated nearly in the centre of the lower surface of the lobe. On the upper surface of the great lobe there was an old adhesion of considerable extent between the diaphragm and the liver. The gall-bladder was full of green-coloured bile. The bowels throughout showed that there had been much irregular spasmodic action in them. The cardiac end of the stomach was full; the pyloric end was contracted. The duodenum was also contracted. These parts may have been affected by the pressure of the abscess on them.

"In this case it is remarkable, that the patient, a man of great judgment and perfect coolness, who was thoroughly persuaded that he understood the nature of his illness, never suspected disease in his liver. He said that in a former illness an adhesion had taken place between the diaphragm and the lungs, and to this he ascribed the spasms in the diaphragm. I examined the chest, and found that the pleura were attached almost throughout their surfaces. The adhesion of the liver to the diaphragm will, however, better account for the symptom in question.

"Although throughout my attendance on Mr. H. I feared that some great internal organic lesion existed, I could not decidedly say what it was. The absence of pain in the right side or shoulder, the patient's being able to lie on either side, and his not confessing to his ever having had any rigors, appeared to me almost like proof that there was no abscess in the liver; and I confess that I went on very much in the dark; administering to symptoms as they occurred, and most anxious to credit Mr. H.'s assurances that he had suffered in the same way in former illnesses.

"I have since ascertained, that, three weeks before my attendance on this gentleman commenced, and previously to his having marched upwards of 200 miles down the Coromandel coast of India for ten days, during the hottest season of the year, he had suffered at Madras from repeated attacks of shivering. There can be little doubt that these symptoms marked the formation of matter. And it adds considerably to the interest of this fact, that so little were those shivering fits connected, in Mr. H.'s mind, with his fatal illness, that, in our many conversations on his case, he never once alluded to them. I may mention, however, that an intelligent officer, who commanded the bishop's escort, observed to me, before the disease assumed a serious character, that, from the appearance of Mr. H.'s countenance on the march, he felt convinced that he (Mr. H.) had some mortal malady hanging about him." (P. 37.)

The following likewise we should be scarcely justified in omitting.

"It happens very fortunately for my present object, that I have lately had an opportunity of watching (in the case also of a medical man) the progress of puro-hepatitis to its fatal termination in this country.

"Mr. Surgeon B., after having served eleven years in India, was compelled by the state of his health to return to England. His mode of life, during the latter years of his service in that country, had been exceedingly intemperate, and latterly he had lived almost entirely on ardent spirits. The consequence had been alarming disorder of the stomach, which, before he left India, had assumed the character of organic disease. His health improved on board ship, where he had been enabled to wean himself from the brandy bottle. In August 1830, while in the west of England, he was attacked with what was considered by his medical attendant as irregular ague, for which he was treated in the usual way. But, although the aguish symptoms were relieved, he was not restored to the health he had enjoyed on his landing in England. His stomach again became irritable, and he rapidly lost flesh. He came to Edinburgh in the beginning of December 1830, and, when he placed himself under my care, the following was his condition: He appeared to be in the last stage of general atrophy, and his countenance bore the indescribable marks of a man sinking under organic disease. His principal suffering was in his right leg, which was bent up upon his body, this being the only position which gave him any thing like relief. His skin was cool, his pulse 120, his tongue, though not loaded, had the fleecy-grey moist look which betokens organic disease; and he had great irritability of the stomach, with difficulty of swallowing, and occasionally severe pain, referrible to the cardiac orifice of the stomach. He had frequent attacks of hiccup, which sometimes lasted for hours; and there were occasionally acrid sour eructations. His bowels were open, but the alvine discharges were unnatural in appearance. He told me that, although there was no symptom referrible to the liver in the intermittent feverish attack with which his present illness commenced, yet so impressed was he with the belief that there was something wrong in that organ, that latterly he had persuaded his medical attendant (although he thought it unnecessary) to apply leeches, and to blister him on the right side. He had since then resorted almost constantly to blisters over the stomach, and the only quiet sleep he had enjoyed for months had been during their vesication.

"I told Mr. B. that there was every reason to fear that an abscess had formed in the liver; that there was disease at the cardiac orifice of the stomach; and that I could account for the peculiar suffering in his leg only by supposing that there must be a tumor within the pelvis pressing on the nerves of the leg.

"He lingered on for seven weeks with little change of symptoms; his pulse varying from 120 to 140: his stools, although unwholesome in smell, were latterly excrementitious, and not ill coloured: urine in very small quantity, and thick: occasional troublesome cough, with much expectoration. There was almost constantly severe suffering in the right leg and hip. Sleepless nights, and colliquative sweats.

"My treatment consisted of aperients and anodynes, a succession of blisters over the stomach, and anodyne liniments to the spine. Mr. B., would have nothing to do with mercury in any shape.

"*Sectio cadaveris*. Extraordinary emaciation. There was much flatus in the alimentary canal; the omentum adhered to the peritoneum lining the abdomen and the floating viscera at several points. The liver adhered to the peritoneal lining of the diaphragm and abdominal walls throughout its whole convex surface, apparently the consequence of some former attack of hepatitis. The whole of the viscera on the right side formed a general mass of disease. The posterior portion of the great lobe of the liver was gangrenous. On attempting to raise the liver, the fingers broke into a large abscess, which seemed to occupy the whole of the lower part of the great lobe, and was filled with matured pus. The ascending colon, the duodenum, and liver, were formed into one mass of disease; and, on opening the stomach, the whole of its inner coat was found to be thickened and ulcerated in various parts. The pylorus was hard and almost impervious. The mucous coat of the cardiac orifice of the stomach, and of a portion of the œsophagus, was thickened, ulcerated, and black. The coats of the duodenum were thickened and black, as were those of the ascending arch of the colon. The right kidney was involved in the disease; and the most extraordinary point of the dissection was, that the right ureter had been cut off from its connexion with the bladder; and there had been formed an immense sac of urine behind the peritoneum, and running down among the muscles like a psoas abscess. The psoas and iliacus internus muscles of the right side were black, and apparently mortified.

"This gentleman must have carried a great portion of this extensive disease along with him from India, and the abscess of the liver must have existed for six months.

"These cases are, I think, sufficient to illustrate the obscure nature of the symptoms of puro-hepatitis; and I regard them as the more valuable, because the sufferers were both of them intelligent medical men, who had the natural bias of Indian practitioners to direct their attention to every feeling referrible to the liver." (P.39.)

Counter-irritation, either by the actual cautery or by caustic issues, Dr. Bell speaks of with much confidence, as among the most likely means of preventing the formation of abscess in the liver, and of favoring the absorption of the matter when formed; of which fortunate result several important cases are on record.

The chapters on "Chronic Sero and Puro-Hepatitis," "Functional Derangements of the Liver," "Jaundice," the "Disorders of Tropical Valetudinarians," Diseases of Children," "Irregular Complaints of Infancy," and "on the age at which Children born in India should be sent to Britain, and on the Management of their Health in this country," contain many valuable remarks; but for these we must refer our readers to the volume, which we recommend to the perusal not only of the members of the medical profession, but of the public, and more especially to the attention of practitioners and others who are either themselves going to, or have any connexions in, the East.

A Further Examination of the Principles of the Treatment of Gout; with Observations on the Use and Abuse of Colchicum. By Sir Charles Scudamore, m.d., f.r.s., &c. &c. *The second Edition, considerably altered and enlarged.*—8vo. pp. 127. Longman and Co., London.

In this book Sir Charles Scudamore offers many observations respecting the effects of certain remedies frequently used in gout, which patients who are afflicted with the disease, and who are inclined to trust to their own rather than their physician's skill, will do well to attend to, and from which the medical practitioner may himself derive some very useful hints.

The chief object of these pages, we are told in the preface, is to inquire into the real merits of the Colchicum autumnale as a remedy in gout. This subject may appear to be almost exhausted; but those who have opportunities of observing the injudicious and even dangerous manner in which this powerful and much-abused remedy is used by patients themselves, as well as the erroneous principles upon which it is too frequently employed by the profession, will agree with us that Sir Charles makes no unprofitable demand upon our time, when he calls our attention to a "further examination" of its powers, and to the particular kind of cases in which it may be safely and advantageously employed. If we are much indebted to those who *add* to our list of remedies, our thanks are also no less due to those who endeavour to establish the *real* merits of medicines which have been long known, but which have been so indiscriminately employed as to render it extremely doubtful to what degree of confidence they are fairly entitled, and in what manner and in what particular class of cases they can most usefully be employed.

In the treatment of gout, the practitioner must steadily keep in view that the peculiar external appearance of inflammation, which we denominate the gout, is the least part of the disease, and is to be regarded as the sure sign of some error in the constitution, which is the real disease to be principally treated; the local suffering being the effect of a cause existing in the system. Sir Charles believes that the gout, which appears to the eye as an external disease, is most essentially depending on that species of repletion which belongs to the vessels of the abdominal viscera, and chiefly of the liver.

"In its progress, it manifests this connexion more strongly; and I do affirm that, in every long-established case of gout, the functions of the liver are more or less unhealthy, in combination with a disordered condition of the intestinal canal, with evidences of error in the secretions derived from the kidneys and from the skin; and, also, in proportion as the tyranny of the disease becomes established, the nervous system partakes largely in the derangement. The stomach itself, which at the earliest periods of gout is often little, or not at all, affected, now becomes disordered, and serious indigestion commonly prevails." (P. 7.)

We pass over the "short review" which is given "of the theory and practice which have prevailed in ancient and modern medicine up to the present time:" it is a learned but somewhat useless episode.

From various experiments which he has made, Sir Charles infers that the eau medicinale, Wilson's tincture, and Reynolds' specific, are all preparations of colchicum.

"In direct opposition to the results of Sir Everard Home's experiments, I found that the sediment deposited by the wine of colchicum, or by his own infusion, consisted chiefly of mucilage and extractive matter, and that it was a perfectly inert substance administered as a medicine. I derived the same result, however, as he experienced in regard to the sediment deposited by the eau medicinale, which acted powerfully; and hence the great difference of operation as a medicine, whether the eau medicinale be administered when poured off clear from its sediment, or with the sediment shaken up. The same dog recovered completely from a dose of the clear liquid, while an equal quantity of the turbid proved fatal in nine hours. I suspect that the composition of this extraordinary medicine may be the inspissated juice of the fresh roots, purified and much concentrated, mixed with a light French wine." (P. 33.)

Three drachms of the eau medicinale, and six of Wilson's tincture, given each in two doses, proved fatal to a dog; and all the strong preparations of colchicum produced the same effects, both as to the symptoms and the morbid appearances found on dissection. But three ounces of the *acetum colchici*, mixed with magnesia, administered in two doses, did not occasion illness, but merely acted moderately on the bowels and kidneys. This fact is offered in proof of the mildness of this preparation, "and whether or not it be useful or efficacious as a medicine, must be determined by its effects on the human subject."

Sir Charles objects to any countenance being given by the regular physician to the nostrums just mentioned, from having long observed their very injurious effects, administered as they are in a manner calculated rather to suppress than cure the disease, and, if taken with frequency, in a serious degree to injure the nerves of the stomach, its mucous membrane, and that of the intestinal canal; impair the functions of the liver, and debilitate the powers of the whole system. When the medical practitioner objects to the use of any empirical remedy, the public are too ready to believe that he is influenced by interested motives alone, and that he is much less apprehensive that his patient will suffer in his constitution, than that he himself will "suffer in pocket," by a diminution of his fees. But we are much mistaken if the confidence of the public is not now greatly shaken with respect to the safety of either of the nostrums referred to. We have often been told by gouty patients that they could relieve the local pain of the disease by Wilson's or Reynolds' remedy, but that they were afraid to have recourse to them, from a conviction of the mischief they had inflicted upon their general health.

Ample experience has convinced Sir Charles of the impropriety of opposing the threatened invasion of a fit of gout by any preparation of colchicum; for, however unwise and unnecessary it may be to allow the symptoms, when formed, to pursue their own tedious and painful course, it is too much of a contrary principle to thwart nature's design altogether, by seeking in this manner to oppose the production of the fit. To illustrate this opinion, some cases are briefly related, in which colchicum arrested the local pains, but greatly increased the constitutional ailments, and appeared to lead to organic disease.

"Having delivered so strong a protest against the inconsiderate employment of the strong preparations of colchicum, the question will be fairly proposed, is this medicine, in any of its forms, a proper remedy to be employed in the treatment of a fit of the gout? In my answer, I trust that I shall not be found inconsistent, if I recommend a cautious employment of the mildest preparation of colchicum which we possess, the acetum, either combined with calcined magnesia and sulphate of magnesia in some pleasant vehicle, or with carbonate of magnesia and the sulphate in a saline draught, as I have fully described in my Treatise, repeated three or four times in the twenty-four hours, during the violence of the symptoms, and afterwards in a more occasional manner, always taking care not to irritate the stomach by nausea or vomiting; an effect, however, which scarcely ever happens from this combination of ingredients. I make it my object to seek the slightest, instead of the greatest, aid to the removal of the symptoms from colchicum. The difference is extreme between the administration of a strong preparation of colchicum, per se, so that it may exert all its power on the stomach and nervous system; and the taking of a preparation so mild as the acetum, used in conjunction with corrective and gentle aperients; by which method it is not long retained in the stomach; while the leading object of the treatment is to evacuate freely, yet not severely, the morbid secretions; adding, too, the important influence of mercurial alteratives, the pilula hydrargyri or calomel, according to the indications to be fulfilled; and probably combined with James's powder, and occasional doses of compound extract of colocynth. In the majority of cases, all the severe symptoms of gouty inflammation and pain yield most favorably to this method of treatment, joined with anodyne preparations and sudorifics at night; and, also, with the auxillary influence of careful local treatment; all of which methods I have set forth in my treatise. The most difficult and untractable cases are those in which some one or other of the strong preparations has been the oft-tried remedy, breaking the force of the acute symptoms, but leaving a disposition to chronic gout in its most harassing forms. The habit of relapse becomes established in the constitution. The strong medicine is not a means of cure; the weaker one is incapable of affording the same prompt and certain relief which it scarcely ever fails to do, when such false practice has not been pursued. But no injury, present or future, awaits the proper employment of the acetum colchici draught, or of the acetous extract, of which I shall have future occasion to speak. I have been frequently called upon to undo the serious evil which has been committed by the empirical treatment; and by perseverance I have succeeded." (P. 55.)

Gout is frequently complicated with other maladies; but, whatever the existing disorder may be, it should be treated, with very little modification, according to the actual symptoms, and not upon any fanciful theory regarding the gout. Sir Charles observes, that ammonia, if given in large doses, possesses a higher power than any other medicine of exciting the gouty disposition into action. He considers it also an axiom of importance, that mercurial medicine should never be administered to gouty persons to any extent which carries with it the risk of producing mercurial fever.

"Before I take leave of the subject of the treatment of a paroxysm of gout, I wish to deliver my sentiments more at length respecting colchicum, and to consider the merits of opium as an auxiliary remedy. I venture to assert, as a principle, that, in the administration of colchicum, it should be our care to use it with a most sparing and cautious hand, viewing its effects rather as palliative than curative, as subordinate to the more radical means of treatment rather than as the chief agent for the cure of the disease. As I have already had occasion to observe, the acetum colchici is the mildest of all the preparations. The Pharmacopœia directs one ounce of the fresh roots to seventeen ounces of fluid, sixteen of diluted acetic acid, and one of proof spirit. For the vinum colchici (so called) the proportion of the fresh root is twelve ounces to twelve ounces of fluid, four of proof spirit, and eight of water. But, besides this extraordinary difference of strength, arising from the different quantities of material in the two preparations, we may consider that the acetic acid exerts a modifying power over the active principle of the colchicum (veratrine), as it does over opium and squills, rendering its action on the animal economy milder. When the acid is neutralized by an alkali, the colchicum still remains in solution. When desiring the most cooling form of draught, I give the acetum with a dose of neutralized lemon-juice and carbonate and sulphate of magnesia; and, when inflammatory action is more than usually active, I add tartarized antimony. If wishing more distinctly a purgative effect, I substitute the calcined magnesia for the carbonate, omit the neutralized lemon-juice, and probably add some tincture of senna or a small portion of tincture of jalap. In most instances, and especially where the empirical treatment has not been before employed, the continued use of this draught fulfils, towards the removal of the gouty symptoms, all that a prudent physician should desire to obtain from colchicum. I sometimes prefer the administration of the acetum colchici reduced to the solid form, and in a pill. The idea of making a preparation of this kind occurred to me some years ago, when I requested Mr. Garden, of Oxford street, to evaporate the acetum colchici down to the consistence of a soft extract, over a water-bath, at so low a temperature as to be free from all risk of decomposing the material; in which state it may be considered that one grain is equivalent to eighty minims of the fluid. I commonly direct two grains of the subcarbonate of ammonia to be united with one grain of this extract; conceiving that the medicine agrees better with the stomach when the acid is neutralized. It may be joined with sedative ingredients, as Dover's powder, or conium, or hyosciamus; or with a purgative, as the compound extract of colocynth, or extract of rhubarb, as circumstances shall direct; or it may be given alone." (P. 88.)

The acetum colchici is in use at several of our hospitals in cases which require a moderate influence of colchicum; and it may be added that Sir Henry Halford mentioned it with approbation in a paper on Gout which he read to the College of Physicians in June 1831.

Sir Charles notices a new preparation of colchicum which comes from Mr. Battley. This is the inspissated juice of colchicum, obtained by expressing the fresh roots, and which, by a certain process, is purified and carefully concentrated to the consistence of an extract. Dr. Hue, of St. Bartholomew's Hospital, gives the following opinion of its virtues:

"'I have so often witnessed the very uncertain* and variable effects of the wine of the roots, and of the seeds of colchicum, and more particularly of the acetum, that I was on the point of trying this very valuable medicine in substance, when I met with what I was looking for in the inspissated juice, an unsophisticated preparation. I have given it a most extensive trial, with a success which has exceeded my most sanguine expectations. In acute rheumatism, the most severe symptoms have given way to the medicine in not longer than twenty-four or thirty-six hours after its exhibition; and the proportion of favorable cases is so great as to justify the strongest terms which I might be disposed to employ in recommending it. I have less experience of it in gout. The dose of the preparation is one grain every four hours; and, as soon as it may have produced either sickness or purging, I give it only every six hours, or even at longer intervals, or altogether withhold it.'" (P. 92.)

Sir Charles states, that, in the treatment of acute rheumatism, there is far less objection to the employment of colchicum, so as to bring the system decidedly under its influence, than in the treatment of gout; for the rheumatic inflammation is very much less a secondary disease than that of gout; nor is acute rheumatism a disease of certain return, like gout.

The baths at Buxton are highly spoken of in cases of chronic gout or rheumatism. Upon the diet and regimen which the gouty patient requires, and upon preventive remedies, some good practical remarks are made.

We have now laid before our readers the leading points which are discussed in this brief work. It is written in rather a desultory manner, but its perusal will not occupy more than an hour, and cannot fail to furnish the practical reader with some "fit food for his memory." The directions for the use of any remedy that is mentioned are open and candid; and we are very happy to find that Sir Charles "reprobates mysterious conduct, and, on the contrary, considers that the physician should always be ready to explain clearly his views and principles of treatment."

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* "In the course of my experiments, I found much difference in the goodness of the colchicum roots, some being very porous and spongy, and absolutely inert in quality. Mr. Battley pronounces the following as the signs of a good root: 'roundness, plumpness, firmness on cutting, and being covered with a creamy matter immediately on being incised. The most fit time of the year for taking up the root is in June, before the offset from the parent root is formed.' The best roots are procured from Oxfordshire and Buckinghamshire."

Illustrations of Elementary Forms of Disease. By ROBERT CARSWELL, M.D., Professor of Pathological Anatomy in the University of London, &c. *Fasciculus I. Tubercle.*—Imperial 4to. London, 1833.

OF all the sciences connected with medicine, pathological anatomy, or the study of the changes produced by disease, remained for the longest period uncultivated, and even disregarded. The attention of the Hippocratic school was almost exclusively directed to the symptoms of disease; and it is vain to expect that the followers of the brilliant medical theories, which sprung up one after another during the seventeenth and eighteenth centuries, would think of pathological investigation: their supposed knowledge of the proximate cause of disease rendered all further inquiry needless and unnecessary; and to the anatomist alone we are indebted for any pathological discoveries made during this period.

In a science like pathological anatomy, which could be founded only by the accumulation of an immense number of well-conducted observations, much time necessarily passed before any attempt was made to arrange them in systematic order; and, indeed, we find that, down to a very recent period, all works on this subject have been confined to the mere detail of isolated facts.

To BICHAT we are certainly indebted for the first attempt at classification; and, since his time, the labours of succeeding pathologists, both in this country and on the continent, have been continually furnishing materials for, and contributing to, the formation of a more perfect system of Pathological Anatomy. BAILLIE, ABERCROMBY, HOOPER, BRIGHT, BOYLE, LAENNEC, ANDRAL, LOUIS, CRUVEILHIER, and many others, have each taken up the study of certain organs, or classes of organs, and, by their laborious researches, have thrown such light on their respective subjects, that it only required the skilful hand of one well acquainted with their labours to form them into a system, and elevate the study of morbid anatomy to the rank of a science.

Various attempts of this kind have been made; but they have certainly fallen far short of what might have been expected. Instead of studying pathological anatomy for itself, some authors have taken physiology as the basis of their classification, and, in their attempt to submit the latter to the laws which regulate the former, they have encumbered it with a mass of theory and hypothesis, the necessary result of the imperfect state of that science on which their arrangements are founded. Others, viewing pathology through the medium of general anatomy, have committed faults of no less magnitude; for, as we have the same morbid process affecting different tissues, it is utterly impossible, by this *arrangement*, to avoid continual repetitions, or preserve order or precision.

Works, therefore, founded on such artificial systems, though often rich in facts and observations, are extremely ill adapted for those who wish to learn the elements of this science; the materials being accumulated in such confusion as speedily to tire and disgust the student. A philosophical system of pathological anatomy should rest upon the general facts naturally arising out of its own laws, and not be made dependant for its foundation upon those of any other science. Every morbid change must be studied for itself, as it appears in each tissue and in each organ, in the solids and in the fluids, and its own specific characters pointed out and distinguished amidst the accidental circumstances with which they may be combined.

Entertaining such views, it gives us great pleasure to see this important subject taken up in a proper manner by Dr. Carswell, a pathologist of distinguished talents, whose whole life appears to have been almost exclusively devoted to the study of the subject, and whose extensive opportunities of acquiring a knowledge of it have only been equalled by his zeal and industry in taking advantage of them. He adopts a purely "*Pathological arrangement*, making diseases themselves the basis of his classification. In accordance with this plan, each diseased state or product will, in the first place, be represented under that form which may be considered as constituting its type, or most perfect state, that is, that peculiar assemblage of characters under which it most generally presents itself, and by means of which it is distinguished from other diseased states; and, in the second place, as it appears in the different tissues, systems, and organs of the body. The essential characters of the disease, and its various modifications and varieties, will be thus successively depicted, before passing to another and a different disease."

In thus taking disease itself as the basis of his arrangement, Dr. Carswell has adopted the only true ground upon which a clear and faithful view of his subject could be exhibited: he will do, in short, for morbid structures that which Bichat did for the healthy tissues, and with the guarantee for the further execution of his work which the first fasciculus affords, we do not hesitate to affirm that Dr. Carswell's work will form as remarkable an epoch in the history of pathological as that of Bichat did in general anatomy.

Our author's views are also calculated to lead the way to great improvements in the practice of medicine; for, considering those changes found at death rather as the effects of disease than as disease itself, he has not confined himself, like the generality of morbid anatomists, merely to the accurate description and delineation of these ultimate changes, but has endeavoured to follow each up to its source; and the attention of the physician, being thus chiefly directed to the primary changes in healthy structure, he will be enabled to apply his remedies with a precision and effect hitherto unknown.

Dr. Carswell has chosen *Tubercle* as the first subject for illustration, "because this morbid product affords peculiar facilities for developing the plan by means of which he intends to illustrate the elementary forms of disease." He defines tubercle to be "a pale yellow, or yellowish-grey, opaque, unorganized substance, the form, consistence, and composition of which vary with the nature of the part in which it is formed, and the period at which it is examined."

Our author then goes on to describe, under different sections, the seat, form, consistence, colour, composition, progress, and termination of tubercle.

Seat of Tubercle. The most ancient opinion with regard to the seat of tubercle is that of Sylvius, who placed it in the supposed lymphatic glands of the lungs; and this notion has been revived in our own day by Broussais. A much more generally adopted opinion places it in the cellular membrane of the parenchyma of organs. This opinion was first broached by Stark, and adopted by Baillie, Bayle, and several others. Laennec, Andral, and Louis, while they give this as its most general seat, admit, at the same time, its occasional formation on the surfaces of mucous membranes. Cruveilhier, on repeating some experiments first made by Clayton, above one hundred years ago, and since by Saunders, in which tubercles were formed by the injection of mercury into the veins and trachea of dogs, was led to maintain that tuberculous matter was a sort of pus modified by the seat and nature of the inflammation, and that it was formed on the surface of mucous membranes, and more particularly in the air-cells of the lungs. Dr. Carswell, taking a more general and less exclusive view, thus explains his ideas on the subject, "considered in a general point of view, and in relation to the different tissues, systems, and organs of the body, the mucous system is by far the most frequent seat of tuberculous matter. In whatever organ the formation of tuberculous matter takes place, the mucous system, if constituting a part of that organ, is in general either the exclusive seat of this morbid product, or is far more extensively affected with it than any of the other systems or tissues of the same organ. Thus, the mucous system of the respiratory, digestive, biliary, urinary, and generative organs, is much more frequently the seat of tuberculous matter than any other system of tissue which enters into the composition of these organs."

We think this discovery of more importance than might at first be imagined; for tuberculous matter being once demonstrated to be a depraved secretion, taking place, for the most part, on the surface of mucous membranes communicating with the exterior, we are not only directed in the application of remedial and preventive means, but have even grounds to hope that some remedy may yet be found for this fatal disorder.

The various circumstances which modify the form, consistence, and colour of tuberculous matter, are clearly pointed out by our author. When speaking of the composition of tubercles, the theory of Dupuy and Baron concerning their hydatid origin is shown to be inconsistent with the fact "that tuberculous matter is generally formed *ab origine* on the secreting surface of hollow organs."

Softening of tubercle is shown not to proceed from the centre to the circumference; and the appearances which led Laennec and others into this error, are very ingeniously explained. In like manner the erroneous ideas respecting encysted tubercle are pointed out.

Under the head of *terminations of tubercle*, the author's opinions on the important questions of the absorption of tubercle, its transformation into calcareous concretions, and osseous and cartilaginous tissue, of the filling up of caverns, and the obliteration of bronchi, are fully and clearly stated, and are of the greatest importance in a practical point of view.

The delineations which illustrate each point relative to the disease are executed in a style which far surpasses any thing that has yet appeared in this country or on the continent. They are drawn on stone, by the author, and are quite free from the high colouring which may be noticed in most plates of the kind hitherto published. They represent, moreover, the morbid parts and the portions of the organs in which they are seated, of the natural size; a circumstance to which we attach great importance, as it enables the student to form correct impressions on the subject.

In plate I. a minute and almost microscopical dissection shows the tuberculous matter filling the bronchi, and traced from them along their last ramifications, even into the air-cells themselves. It has, no doubt, been by careful dissections on this plan that our author has been able to detect the real seat of tubercle, which could have no more been done by the usual transverse sections of the lungs, than could the minute anatomy of the brain have been discovered by the horizontal sections which for so long a period were the only means employed for demonstrating its structure.

The same matter is then represented successively in the uterus and fallopian tubes, in the kidney, the testicle, the gall-ducts, the lymphatic vessels, the follicules of the intestines, in the brain, in false membranes, and in blood itself contained in the spleen. The ulcerations of the vagina and intestines are also beautifully represented.

In plate IV. we find the various termination of tubercle, the contraction of caverns, the obliteration of bronchi, &c. But fig. 3 of this plate is, perhaps, one of the most interesting; we here see the manner in which hæmoptysis is produced, by masses of tubercles preventing the return of the venous blood from the extreme parts of the lungs, and thus leading to effusion upon the surface of the bronchi.

We might, and perhaps ought, to have enlarged upon the truth and beauty of these delineations; upon the very valuable matter contained in the letter-press; and above all, on the general utility and great cheapness of this splendid work; but these qualities are conspicuous of themselves, and need not the assistance of our praise to be duly appreciated.

In conclusion, we have no hesitation in expressing our conviction that Dr. Carswell, by his researches and delineations, has thrown more light on the subject of tubercle than all that has been done before him: and that, in giving such a work to the public, at a rate which places it within the reach of every member of the profession, he is entitled in no small degree to the gratitude of his professional brethren.

BIBLIOGRAPHICAL NOTICES.

A Demonstration of the Nerves of the Human Body. Parts II. and III. *Containing Descriptions and Illustrations of the Lumbar and Sacral Portions of the Sympathetic and the Nerves of the Abdominal Viscera and the Cerebral Nerves.* By Joseph Swan.—Imperial folio. London: Longman and Co.

This is, perhaps, the most splendid anatomical work ever presented to the profession in this country; and, in point of utility also, it may fairly compete with any other publication of the kind. It certainly is very desirable that every anatomical student should make himself master of every part of the structure of the human body by his own manual dissection; but, like many other objects that are much to be wished for, this is one that can rarely be obtained. Very few students would have the patience, and very few the requisite dexterity in the use of the scalpel, to trace out the innumerable branches and connexions of many of the nerves, and yet it is absolutely necessary that this information should be obtained; for, without it, the medical or surgical practitioner must constantly be involved in doubt and perplexity: he must be utterly unable to account for the origin, or even to suspect the nature, of many curious, and even extraordinary, morbid phenomena which so frequently arise in the course of nervous diseases. How unintelligible, for instance, how perfectly bewildering, must often be the symptoms which occur from spinal irritation in hysterical complaints, to the practitioner who does not know the various and complicated connexions of the spinal and great sympathetic nerves, and the many important organs they supply with nervous influence, and which must consequently sympathize with, and suffer from, any lesion affecting them. It may be said that all the knowledge which can be necessary for practical purposes upon this subject may be obtained at anatomical lectures, or by verbal descriptions from anatomical works. But we are convinced that more information may be obtained upon it, and more unfading knowledge, from a few hours' study of really good and correct plates, *of a large size*, than can be derived from any lectures, or any books, without such assistance. The parts are too minute to be seen by the majority of pupils in an anatomical theatre, and a mere verbal description of them cannot convey to the mind half so clear and fixed idea of them as well-executed engravings.

We lay particular stress upon the *size* of the plates, because we deem this a very important point. Small anatomical engravings are necessarily confused; if many parts are illustrated in one drawing, the letters of reference are with great difficulty made out. The magnificent scale upon which Mr. SWAN's engravings are executed renders every part he illustrates clear and perceptible at a glance.

We cannot bestow higher, nor can we bestow more just praise, than by saying that all that the graphic art can achieve for the instruction of the student in one of the most intricate parts of anatomy has been achieved by Mr. Swan, in these beautiful and correct "demonstrations of the nerves of the human body." This is precisely the kind of work which should be added to every scientific library, and all public and private teachers of anatomy will be enabled, by its help, very materially to assist their pupils in obtaining a lasting knowledge of that part of anatomy of which few obtain sufficient knowledge, and which is of such vast importance both in a physiological and pathological point of view.

Parts XIV. XV. XVI. *The Principles and Practice of Obstetric Medicine, in a Series of Systematic Dissertations on Midwifery, and on the Diseases of Women and Children. Illustrated by numerous Plates.* By DAVID D. DAVIES, M.D., M.R.S.L., &c. —4to. London: John Taylor.

In these three parts of this very useful work for students, and even practitioners, there is much practical information, upon the subjects of Amenorrhœa, Menorrhagia, Dysmenorrhœa, Lucorrhœa, &c. In the relation of some of his cases, Dr. DAVIS is occasionally somewhat too diffuse, and too many ornamental digressions are indulged in. We are by no means averse to an easy and even amusing style of writing, even upon medical topics; it is perhaps the surest attraction for the student, and well adapted to instruct, without wearying him; Dr. GOOCH's is a good example of what we mean, but he had always the good taste to confine himself within proper bounds, and to preserve that sobriety of diction which his subject demanded. Dr. Davis sometimes errs on both these points: for, example, it can be of no consequence to the practical reader, nor can the information be at all interesting to him, to be told that a chlorotic young lady falls in love "with a gentleman not more than seven or eight years older than herself;" that he possessed a handsome person, and very elegant manners; "that he had a fine taste for poetry and general literature," and that "the attachment was mutual, and equally ardent upon both sides." As the health of the lady was alone concerned, and we are not told that the gentleman sought for or required the doctor's advice, his embellishments might safely have been left unnumbered and untold. Almost every page presents passages of a similar kind; and, if a student were accidentally to cast his eye upon them, he could never imagine the book was from a serious author upon a serious subject. Such novel-like morsels are utterly out of place.

Dr. Davis's work possesses many and solid claims to the attention of the student, and we should be sorry that those claims should be at all weakened by the fault we have hinted at, and which, in future, may be so easily avoided.

Part II., February 1833. *Principles and Illustrations of Morbid Anatomy; adapted to the Elements of* M. Andral, *and to the Cyclopædia of Practical Medicine (with which it will correspond in size;) being a complete Series of coloured Lithographic Drawings, from Originals by the Author. With Descriptions and summary Allusions to Cases, Symptoms, Treatment, &c. Designed to constitute an Appendix to Works on the Practice of Physic, and to facilitate the Study of Morbid Anatomy in connexion with Symptoms.* By J. Hope, M.D., F.R.S., Physician to the St. Mary-le-bone Infirmary, &c.—London; Whittaker.

The diseases illustrated and briefly described in this part of Dr. Hope's useful work, are tubercular consumption, pulmonary apoplexy, emphysema of the lungs, encephaloid tumor of the lungs, melanosis, black pulmonary matter, œdema of the lungs, and ossification of the pulmonary substance, and hydatids. The plates are four in number, and contain together twenty-three figures illustrative of the various morbid appearances presented by the diseases above mentioned: they are much better executed than those contained in the first part of the work; the drawing is correct, and the colouring sober and natural.

No. I. *Transactions of the Society for the Encouragement of Arts, Manufactures, and Commerce, for the Session* 1831-32.—Society's House, Adelphi, 1832. 8vo. pp. 222; plates, 10.

Although our *medical*, as is most fitting, greatly preponderates over our more general *physical* department, still we do not disregard the rapid progress which correlative sciences are making, and especially those which influence and may advantage anatomical and physiological pursuits: and if there is any one point at which we more particularly rejoice, in the universal improvement of our profession, it is the more philosophic character which all ranks deservedly enjoy, from the great attention they have lately paid to the general physical sciences, without in the least neglecting those which are more peculiarly their own. Medical men have done much in all the natural sciences, and we are jealous that they should still march in the van: and this they promise to do, by the more liberal schemes of education which our Halls and Colleges now demand.

Among a vast number of curious and important communications on the sciences and arts, there will be found a very able and interesting paper, describing a new form of *dissecting microscope*, and detailing some microscopic observations, contributed by a medical student to the present volume of Transactions, to which our attention has been directed, and which has given rise to the foregoing observations.

It will be recollected that, in former numbers, we have noticed various improvements in the construction of microscopes, introduced by Messrs. VARLEY, VALENTINE, SOLLY, PRITCHARD, &c., and have recorded some of the curious discoveries made by their means; and we have now the additional pleasure of stating, that several advances have, within the past year, been made by Messrs. TURRELL, HOLLAND, and SLACK; detailed accounts of which are published in the Transactions of the Society of Arts now before us.

Messrs. Turrell and Slack's improvements are in the mechanical construction of the instruments, and are much to be commended; but Mr. Holland's new lens, which he calls a "triplet," is by far the most important. Indeed, it is a glass which no one can venture to be without; its defining power being much superior to either Wollaston's or Herschell's doublets.

Mr. Slack's dissecting microscope has likewise our warm approval; its convenience and cheapness must recommend it to every one; and, in proof of its capabilities, the very interesting paper to which we have already referred, is subjoined: from which we should have made some extracts, did not the details require the figures which, in the original, have been supplied by the liberality of Mr. R. H. Solly, a great friend and patron of the arts, and who delights in forwarding and encouraging practical science, and in assisting those who are labouring in the pursuit. We are therefore obliged, although unwillingly, to refer our readers to the original essays, without enriching our pages by a sample; and shall only in conclusion add, that Mr. Holland lives at No. 7, Manor place, Walworth; and that Mr. Slack's dissecting microscope is made by Ross, of St. John's square, Clerkenwell.

British Flowering Plants. By W. BAXTER, Curator of the Oxford Botanic Garden.

English Botany. Small Edition. By C. E. SOWERBY, F.L.S. &c.

Medical Botany. New Edition. By GILBERT T. BURNETT.

Two of the above works we have previously announced, and now that they have so far proceeded, and six numbers of each are before the public, we think that we should be wanting in our duty, were we not to state that, as far as they have gone, they have fully performed the promises made in the prospectuses, and cannot fail to be of much service, the two first to the general, and the last (as we hope) to the medical botanist.

Mr. BAXTER is well known for his unwearied observations, and the correctness of his judgment; therefore, figures and descriptions coming from a person possessing such extended practical information, will, when completed, form a most valuable work of reference.

The character of SMITH and SOWERBY's "English Botany" has been too long established to need any commendation now. It is only necessary for us to say, that, to those persons who shrunk from the expense of the large, this small edition must be very acceptable.

Of the new edition of Medical Botany, we had rather let others speak than ourselves: we will only mention that, in the five numbers now published, two figures have been re-engraved, viz. Stramonium and Digitalis, and several of the others have had important additions and alterations made; besides which, the letter-press in every number has been much increased, and in some nearly, if not quite, doubled in extent. To these circumstances it is doubtless that it has received the favorable notice of most of our contemporaries; the opinions of two or three of whom we subjoin, as we cannot here venture to express an opinion of our own.

"This new edition, greatly improved in value and reduced in price, will be found a most acceptable present to the botanical student, and the lover of botany in general."—*Dr. Johnson's Review, January* 1833.

"Three numbers of this work are now before the public, and cannot fail to have made a favorable impression on those who have examined them. Each number contains four coloured plates, not of the kind so often called, which resemble nothing in nature; but well executed, and in some instances, highly finished engravings. Some of them are really excellent: nothing, for instance, can be better than the representations of the Hyoscyamus Niger, and the Taraxacum. The Belladonna, too, and several others of the twelve before us, are beautifully executed. Each plate is accompanied with a botanical, chemical, and medical description of the plant, which is clearly and succinctly given, and followed by formulæ for its exhibition. The price is amazingly moderate, 2s. 6d. per number, and the work deserving of every encouragement."—*Med. Gazette, December* 15, 1832.

"We are happy to perceive that the re-publication of this valuable work progresses well; it is greatly improved, enlarged, and published at a less expense than the former edition."—*Medical and Surgical Journal.*

REPORTS
FROM HOSPITALS AND MEDICAL SOCIETIES.

WESTMINSTER MEDICAL SOCIETY, 16th February, 1833.

Effects of large Doses of Quinine.

Drs. James Johnson and Granville having, at a former meeting, mentioned the peculiar effects witnessed in the case of a medical friend, Mr. Scott, who had taken what might be called excessive doses of quinine; Mr. S. being present this evening, he, at the request of the president, detailed his own case at length; the chief features of which are as follows.

From early life, Mr. S. had been the victim of dyspepsia; but, although his stomach was a perpetual source of uneasiness, his bowels had never in any way troubled him, until, in the year 1829, he was suddenly seized with general and violent pains in the abdomen, of so excruciating a character as to defy description. After the use of opiate enemata, the paroxysms subsided; but recurred regularly for several successive nights, and at length even opium failed to afford relief. Turpentine clysters were next resorted to, which acted like a charm; the pains subsided, and no relapse occurred for an entire year: at the end of this period they returned, with, if possible, increased violence, and recurred several times a day; and, the intermissions getting shorter, they at length were almost constant. Now even the turpentine enemata failed to assuage the agony, and a variety of treatment was followed, under the advice of Dr. Johnson, with ultimate benefit.

The attacks, however, though lessened in duration and in frequency, were not subdued, and Mr. S. subsequently consulted another physician, who recommended quinine, looking on the disease as intermittent neuralgia, but telling him, at the same time, that he must not expect relief excepting from *very large* doses. He was desired to commence with two grains three times a day, and to increase each dose a grain every other day, until they arrived at twenty grains; i. e. a drachm a day. Liberal diet was at the same time allowed.

Until the doses were increased to fourteen or sixteen grains, he did not experience any peculiar effects; but then he began to feel heat of skin, dryness of mouth and fauces, and obstinate costiveness. He likewise, at the same time, lost the power of naming substantives; was obliged for a long while to consider what different familiar things were called; and as to casting up a line of six or eight figures correctly, it was utterly impossible, he could never make the amount twice alike. His perceptions of quantity were greatly impaired, so that, in prescriptions, he wrote ounces instead of drachms, ordered drachms instead of grains, directed draughts to be put in gallipots, and prescribed fluids to be made into pills.

Notwithstanding these symptoms, he still persevered with the sulphate of quinine, until he took a scruple four times a day. He was, however, unable to continue these excessive doses long; for the untoward symptoms above detailed increased, so that he was often unable to stand, and several times fell suddenly when in the streets. He, therefore, discontinued the quinine; but, after a short interval, he recommenced its use, at the suggestion of the same physician who at first prescribed it. Now he found that he could not exceed eight-grain doses; for, when he arrived at that quantity, the same effects ensued as from the former scruple doses, and he consequently left it off altogether.

Mr. S. added, that he was unable to take any, even the mildest purgative, without provoking the return of one of these excruciating paroxysms, and that he regulated the alvine excretions by warm water and enemata.

Dr. Johnson, who was present, corroborated Mr. Scott's statement, and observed, that he had watched the case with great attention. He at first believed it to be intermittent neuralgia, but subsequent observations, and the most patient reflections, had convinced him that the abdominal pains were referable to some mechanical cause, which it was his opinion would never be removed. He thought that many slight inflammatory attacks had probably caused adhesions to be formed between the enteric convolutions; and hence, when the peristaltic action was increased by purgatives, the pains recurred; and that the paroxysms were owing to some portion of the intestines becoming involved in these entanglements and adhesions. He thought it better to state this even in the presence of the patient, as less could be expected from the influence of medicine than from extreme ease, in which he considered Mr. S. somewhat deficient, more so than he thought he should be, both in diet and exposure, if similarly affected. He added, that he had himself taken large doses of quinine, and had experienced analogous symptoms to some of those mentioned by Mr. Scott; but that his sensations were all of the most pleasurable kind.

LA CHARITÉ.

Death from a single Leech-bite.

A boy was attacked with symptoms for which it was deemed proper to apply a dozen leeches to the pit of his stomach, and, when they had dropped off, some burnt linen was put to the parts, and the patient was left for the remainder of the day. When he was visited, his bed was found full of blood, and the hemorrhage continued in spite of every attempt to arrest it. Three and twenty hours after the leeches were applied, he was carried to La Charité. The abdomen was covered with one enormous clot, and it was found that the bleeding proceeded from *one* leech-bite, situated a little above the navel. The blood was arterial. Nitrate of silver was in vain applied, and the actual cautery was had recourse to, but not until the boy was too far exhausted; the extremities were cold, pulse nearly gone, and the voice extinct. He died in two hours after his admission.

Dissection. Nothing remarkable was observed, except the absence of blood from the heart and all the tissues. M. BRICHETEAU calculated that the quantity of blood lost amounted, at least, to three pounds; and, for the purpose of ascertaining, as far as possible, the correctness of his opinion, he collected the blood that flowed from a leech-bite in the thigh, and which was suffered to flow for some hours. In ten minutes he obtained three drachms, which gives two ounces and two drachms for the hour; and hence the inference that more than three pounds was lost in the above case.—*Gazette des Hôpitaux.*

This case affords an additional proof to several others of a similar kind that have been reported in different journals, of the necessity of always looking at the punctures some time after the leeches have dropped off. No practitioner, we presume, would omit such a precaution when leeches have been applied to young children; but it should also be observed with respect to adults. Whether, in the above instance, the boy was so far exhausted, when the bleeding was first discovered, as to preclude the possibility of recovery, we cannot determine; but it appears to us that time was lost in the application of "styptics," when other means might have been instantly and effectually applied. The bleeding from a leech-bite may always be arrested by the pressure of a finger on the spot, and it rarely happens that it is necessary to continue the pressure longer than a few minutes. Even if hemorrhage be going on from several bites, the same mode of arresting it may be adopted; for the attendant may ensure effectual pressure by placing a finger over each bite. We have often stopped the bleeding from leech-bites in this manner, when children have been reduced to a very alarming state, and when various other means to arrest it had been tried in vain. In general, also, a very minute piece of sponge, inserted into the bite, and retained by a graduated compress, will at once stop the hemorrhage. The subject may appear trifling, and any suggestions in reference to it quite uncalled for; but we have known more than one instance in which the life of a child has been lost by long-continued hemorrhage from leech-bites, and we are confident that such accidents can never happen unless the practitioner is culpable, by his carelessness in not inspecting the part to which the leeches have been applied, or unless he loses time in applying ineffectual remedies, when either of those we have mentioned will stop the bleeding to a certainty.

Remarkable Case of Fatal Narcotism, produced by twelve drops of Laudanum introduced into the Rectum.

THE following case is perfectly without parallel, and is fraught with practical and medico-legal inferences of the highest importance. We derive the details from the *Gazette des Hôpitaux*:

"A man named Miolet, æt. forty-five, of sufficiently good constitution, was admitted to la Charité for a stricture of the rectum, and lay at No. 8, in the Salle St. Michael. On Tuesday, the 22d January, cauterization, according to the process of M. Costala, was employed in order to destroy the stricture. The operation gave great pain, but induced no other serious symptom. On the 24th, in order to moderate his dreadful sufferings, M. Rayer prescribed an injection of a decoction of marsh-mallows, and twelve drops of the laudanum of Sydenham. This decoction was given at six in the evening, and for some time the patient made no complaint, and during the evening he walked about the ward with the other patients. About nine P.M. he went to bed, and was scarcely laid down when he began to groan a little, and soon after fell asleep. This state lasted ,until two hours after midnight, at which time he was unable to answer the questions of the nurse. His intellectual faculties gradually grew weaker and weaker, his powers of sensation diminished, and he fell into a profound coma, from which, however, he appeared occasionally to emerge. In the morning, at M. Rayer's visit, he was found in the following state:

He lay on his back, plunged in a state of extreme prostration, his limbs absolutely immoveable, and in perfect collapse. The skin was covered with an abundant sweat. The eyelids fell, and the pupils were extremely contracted. The respiration was slow, and less than usually extensive, gradually becoming more embarrassed and sobbing. The pulse was very full, amounting to 110 per minute. What was rather rare was, that the urine was secreted in an unusually great quantity, so that his sheets were as wet as if dipped in water. The entire loss of the intellectual faculties, and of motion and perception, complete the description of this state. He was bled immediately to two cupsful, but immediately after the venesection his pulse still rose, and beat 150 in a minute. Water acidulated with vinegar was introduced almost mechanically into his stomach, and sinapisms were applied to his feet. But all efforts were useless, and he died at about eleven A.M.

The examination of the body was performed on the 26th, at ten A.M. The superficial cerebral veins, especially of the superior region of the brain, were gorged with thick black blood. The cerebral substance was a little moister than natural, but of natural consistence. There was no serosity in the lateral ventricles. The lateral sinuses were gorged with a thick black blood. Nothing particular on the superior longitudinal sinus, or in the spinal cord. The rectum was cancerous to the extent of two or three inches.

Encephaloid matter was observed on the surface of the mucous membrane, and scirrhous structure below it. The rest of the intestinal canal was slightly rosy. The mucous membrane of the stomach, however, was of a reddish brown aspect, and at the extremity of the upper surface of the right kidney there was a little cyst containing a serous and whitish fluid. The liver, especially on its upper surface, presented five or six cancerous patches of small extent. In the lungs there was seen nothing but slight congestion.

These facts permit no doubt as to the occurrence of narcotic poisoning. This is established, in the first place, by the character of the symptoms; secondly, by the presence of the pathological characters always attendant on this mode of death; and, thirdly, by the absence of any other pathological cause adequate to account for death under the circumstances before us.. But how can we explain this event by the introduction of twelve drops of laudanum into the rectum? The evidence of numerous facts scarcely warrants us in coinciding in the opinion of M. Dupuytren, that opium acts in smaller doses in the rectum than in the stomach. This excellent surgeon generally administers it thus in nervous delirium. He believes that the opium is absorbed unchanged from the rectum, while it is partially digested in the stomach. However this be, we cannot but agree with the writer in our foreign contemporary, that the publication of this curious event is calculated to be of much use to medical practitioners, and we think with him that it is all but superfluous to add, that M. Rayer is free from the least blame on this unfortunate occasion.—*Lancet.*

GLASGOW ROYAL INFIRMARY.

Compound Fracture of the Right Tibia; Secondary Hemorrhage, and diffuse Inflammation of the Cellular Texture; Death.

W.P., admitted 27th June, 1826, on account of a compound fracture of the right leg, three inches above the ankle. The injury was occasioned by the falling of a quantity of building materials on the limb. The integuments on front of the leg were lacerated to the extent of two inches, through which an oblique portion of the upper shaft of the tibia protruded; the fibula was also fractured, as were one or two of the metatarsal bones. The pulsation of the anterior and posterior tibial arteries was readily distinguished at the ankle; the limb was therefore put up in the usual manner, and laid on its outer side. A few hours after his admission, smart febrile excitement took place, and continued for several days, requiring bloodletting, purgatives, diaphoretics, and opiates. The dorsum of the foot was swollen and painful, and, on removing the bandage, it was found red and vesicated; these were speedily removed by leeches and a cold lotion. At the same time he complained of pain over the tibia, a little below the knee, which was subdued by the same treatment. On the eighth day, hemorrhage took place from the wound to the amount of ten ounces, which was checked by the application of a tourniquet. At a consultation immediately after this occurrence, the splints and bandage were removed, and the wound found sloughy, and covered with clotted blood. A splint was applied to the outer, and another to the inner side of the leg, and retained by two strips of bandage, the displacement of the bones being prevented without producing unnecessary pressure. The front of the limb was thus exposed, and the wound covered with a pledget of lint, dipped in camphorated oil. The pulse was one hundred and thirty, feeble; the countenance pale and anxious, and the skin cold; but in half an hour this state of collapse, produced by the loss of blood and the alarm which it excited, was got rid of; the pulse continued as frequent, but became full and jerking; the skin hot and dry, the tongue parched, the thirst urgent, and the breathing accelerated, with a tendency to rigor. It was not thought advisable to disturb the sloughy cake which covered the front of the tibia, to ascertain and secure the vessel from which the bleeding proceeded. The leg was swollen to more than twice its natural size, and had that boggy feel so characteristic of extensive destruction of the cellular tissue. Free incisions were had recourse to, and the affected parts covered with an evaporating lotion. He had other three attacks of hemorrhage, but the quantity of blood lost did not exceed six ounces; the febrile excitement increased, and became typhoid; the strength declined rapidly, and he died on the twelfth day from the receipt of the injury. On inspection, it was ascertained that the hemorrhage had proceeded from the posterior tibial artery opposite the fracture; the wound was sloughy, as was the subcutaneous and inter-muscular cellular tissue through the whole leg. There was slight serous effusion under the arachnoid and into the ventricles of the brain, and a few tubercles in the upper lobe of the left lung.

The fatal termination of this case was to be attributed, not so much to the attacks of hemorrhage, as to the diffuse inflammation of the cellular texture, and the typhoid symptoms with which it was accompanied. Had the bleeding occurred soon after the injury, there could have been no hesitation as to the propriety of immediately securing the wounded vessel; but it did not take place till the eighth day, when the gangrenous state of the wound rendered an attempt of this kind altogether unjustifiable. There still remained, however, two modes of procedure which might have been adopted. The first consisted in tying the artery from which the hemorrhage proceeded, at some distance from the wound; and the second, in amputation of the limb.

When a limb is extensively inflamed, swollen, and puffy, which frequently happens in the course of eight or ten days after the receipt of such injuries, it becomes difficult to secure the artery; the usual land-marks by which we are guided are obscured, a greater extent and depth of incision are required, and that, too, in an unhealthy part. If gangrene be impending, the result of this operation will generally prove unsuccessful. I have seen one case, in which the anterior tibial artery was tied three inches above the fracture, for profuse hemorrhage on the eleventh day, and where gangrene supervened, and the patient died. The comparatively trifling amount of the hemorrhage in the case last detailed, and the fact, that the alarming state of the patient did not depend so much on the loss of blood as on the diffuse inflammation of the leg, and the high constitutional excitement which it produced, were the reasons which induced me to defer securing the bleeding vessel by ligature.

The propriety of amputation was also the subject of consideration. Here the question naturally presented itself, under what circumstances are we justifiable in adopting this violent measure, on account of secondary hemorrage from a compound fracture? Should it be found impracticable, from the sloughy state of the wound, to secure the bleeding mouth of the vessel; or should the inflamed and swollen state of the limb, and the extensive destruction of its cellular tissue, be such as to prevent a ligature from being applied to the affected vessel, at some distance from the injury; or should the hemorrhage recur from the activity of the collateral circulation after this had been performed, we should then be warranted in having recourse to amputation. This was not, however, thought advisable in the last case; because, from the typhoid character of the symptoms, and the alarming state of irritability and exhaustion which existed, we had reason to dread that the shock of the operation, and the loss of blood which must have attended it, would prove speedily destructive.

When the injury is followed by profuse hemorrhage, and the ensuing collapse is so severe and protracted as to prevent amputation from being immediately had recourse to, the subsequent reaction, when it does take place, is often unusually violent, and is apt, if not subdued, or at least greatly moderated, to interfere with the healing of the stump, and end fatally, by the formation of purulent depôts in some of the thoracic or abdominal viscera.—*Macfarlane's Surgical Reports.*

COLLECTANEA.

Floriferis ut apes in saltibus omnia libant,
Omnia nos, itidem, depascimur aurea dicta.

PATHOLOGY.

Case of Tetanus, following a Punctured Wound in the Foot, cured by Division of the Posterior Tibial Nerve. By JOHN MURRAY, M.D. Assistant Surgeon, Hon. E. I. C. Service.

I WAS a passenger in the ship *James Pattison*, from England to Calcutta, when, in the channel, three days after leaving Portsmouth, at ten o'clock A.M. on the 15th August last, the surgeon of the vessel (Mr. D. Leslie) came and reported to me that Mr. William Pile, one of the midshipmen, æt. fifteen, had trod upon a rusty nail the preceding evening about nine o'clock, which penetrated the left foot, between the metatarsal bones of the great toe and the adjoining one, and that symptoms of locked jaw had made their appearance. The patient had kept his watch after the accident during the night, which was cold, and the wound had been very painful. When he was seen in the morning at eight A.M. he complained of a stiffness about his jaws and throat, which had increased very much since that time. His countenance was anxious, and his lips appeared swollen and rather livid. A poultice to the wound was the only treatment that had been employed. On consultation, the following draught was agreed to be given:—℞ Pulv. Camphor. ʒss. Tinct. Opii, ♏ lxx.; Syrup. simpl. ℥j. M. s.s.

And as the jaws were nearly closed, and great difficulty found to get them opened to the extent of a quarter of an inch, a piece of wood of this thickness was inserted between the teeth. Half an hour after taking the draught he was visited again, but no beneficial effect had resulted from the opiate. The tetanic symptoms were rather increased, the spasms had partially extended to the muscles of the neck, and the piece of wood was deeply indented by the teeth. The limb was cold, and he said "it was dead, excepting at the site of the wound, which was painful, and that he had little power of moving it." His pulse was 120, and what may be called irritable; and his situation seemed to be one of great danger. He was ordered to be carried to one of the best cabins; and after considering all the different modes of treatment that have usually been recommended and employed in tetanus, and finding how undecidedly they were all spoken of as to affording hopes of cure, I proposed to Mr. Leslie the division of the posterior tibial nerve (by which the injured part was supplied) as a remedy that held out a good prospect of success, from its cutting off the communication between the source of irritation and the brain, at the same time that it was an operation easily performed, and unattended with danger or deformity. I proposed, also, that the original wound should be dilated and cauterized.

My proposals being agreed to, as soon as the necessary preparations could be made, the operation was performed. A straight incision, an inch and a half in length, was made through the integuments and the aponeurotic fascia, about an inch posteriorly to the malleolus internus, which laid bare the sheath of the vessels; and on dissecting deeper, I easily found the nerve in its usual position. By an aneurism needle I separated and raised the nerve, so that I might divide it with greater facility and expedition. When brought thus into view, it appeared to be so remarkable large, being nearly twice the usual size) though of the natural colour, that a doubt was expressed by Mr. Leslie about its really being the nerve. To satisfy him on this point, I requested the patient to extend his foot, which he did with difficulty, and in an imperfect manner, as he said he had nearly lost the power of moving it; but he did it sufficiently to shew the difference between the nerve and a tendon, as it did not become tense in this action. The nerve was then rapidly divided by a single cut of the scalpel, which gave acute pain; and although he could not articulate distinctly before, on account of the closed state of his jaws, *he immediately opened his mouth with an exclamation;* and, on looking at his countenance, I was astonished at the striking improvement in it. I asked him how he felt, and he said "he was already much better, and that his leg had come to life again." He expressed at the same time a great inclination to go to stool. There was scarcely any hemorrhage from the wound, which was then simply dressed by bringing the edges together by adhesive plaster, with lint, and a bandage over it. We next dilated the original wound made by the rusty nail, which also gave (rather unexpectedly) great pain, but did not cauterize it as proposed, as the symptoms had already yielded. A poultice, sprinkled with laudanum, was applied over it. His bowels were then copiously moved; and on being placed in bed, without any additional opiate, he fell into a sound sleep, which lasted without interruption for four hours, and he awoke very much relieved from all his former disagreeable symptoms. His jaws still, however, felt rather stiff, but by a strong exertion he could open them nearly to the full extent. The excessive pain in the original wound, of which he complained previously to the operation, had now entirely ceased, and the motion of the limb was quite restored. It was found, on examination, that the heel and sole of the foot were quite benumbed, but the sense of feeling in the upper part of the foot was not affected. At night he had the following powder:—℞. Pulv. Opii, gr. ij.; Pulv. Camphoræ, ℈j. M.

Aug. 16th. Slept indifferently during the night; complained still of the stiffness of the jaws and neck, and to a greater degree than the preceding evening. He also had pain and tightness across the chest, with headach. I was very sea-sick, and in bed by this time, and unable to make more minute inquiries about the symptoms, but I recommended venesection and another opiate to be given. He was bled accordingly to the extent of twelve ounces;

which induced syncope, and gave great relief; and he had the same opiate as last night, after which he slept a good deal during the day. His bowels were naturally opened, and the same opiate was repeated at bedtime.

17th. The opiate of last night appeared to produce considerable excitement for some time after it was administered, but this was followed by sound sleep. The stiffness of the jaws and neck, and tightness across the chest, have nearly altogether disappeared. He complains of a great deal of numbness in the leg and foot. Pulse eighty, and natural; tongue clean; bowels regular.—Rep. Pulv. h. s.

18th. The tetanic symptoms have entirely disappeared; the numbness of the leg is gone off, and he complains of pain in it, extending from the knee downwards. The parts in the site of the operation are very tender, and extremely painful on pressure. The original wound continues to be poulticed, and looks healthy. The opiate powder to be continued in half the former quantity.

From this date no unfavorable symptoms occurred. The wound in the sole of the foot healed in a few days; that of the operation did not unite by the first intention, and did not heal till about a fortnight after. The sense of feeling began to return in the sole of the foot on the third day after the operation, and is now natural in most places; but there is still, up to this date, an entire want of sensation in the little toe and heel. He complained for some time of not being able to perform the action of separating the toes so easily as formerly, but that no longer exists. He finds no inconvenience in walking, or in the performance of all his regular duties: in fact, he is quite well.

Remarks. I have thought the above case worthy of notice, from he result of the usual modes of treatment pursued in this disease (as given by our best authors) having been so generally unsuccessful. Hennen, whose experience in it must have been great during the Peninsular war, says, "Happy should I be if I could afford any thing satisfactory on this complaint; but in truth, my observations have tended more to show me what I could not trust to, than what I could place the smallest reliance on, when the disease was once fully formed." And he further adds—"I have never been fortunate enough to cure a case of acute symptomatic tetanus." I think it important to notice that he mentions, that in one case he found, on dissection, the nerve connected with the injury thickened. Seeing this appearance so remarkable in the instance I have recited, the lengthened account of tetanus in Cooper's Surgical Dictionary, which I consulted at the time, rather bewildered me as to the treatment to be followed, and only showed the great difficulty to ascertain, amongst numerous discordant accounts, what practice seemed to be attended with the least ill success. "Nothing," as he says, "is a more certain proof of our not being acquainted with any effectual method of treating a disease than the multiplicity of remedies recommended, which are as opposite as possible in their effects." I decided upon following the indication which seemed to me the most rational, and not to adopt any plan or to use any remedies proposed on empirical principles, seeing how unavailing they had mostly all been. I am only aware of one instance in which the communication was cut off between the wounded part and the sensorium, by a suitable division of the nerve supplying the part. It is one adduced by Baron Larrey; and, as in that case the operation was followed by a similar result to the present, I am surprised that the hint never was taken from it, and followed up by others. Amputation has frequently been performed with the same view, but has seldom succeeded, probably from its having been too long delayed; and I would ask why such a severe and maiming operation should ever be thought of, or persisted in, when the same object can be so much more readily and scientifically attained by a simple incision?

We are told that, when the disease invades very quickly, the danger is always greater than when it comes on at a more distant period from the receipt of the injury. In this case its attack was very early, and the progress of the symptoms rapid; and I have no doubt that it would soon have run its course to a fatal termination, if it had been left to the sanative powers of nature alone, or treated in the usual manner; but very little time was lost in having recourse to the operation that proved a remedy of immediate and effectual power, after the disease had decidedly formed; and I think it may have been of the greatest consequence that it was resorted to so soon after trismus appeared.—*Med. Gazette.*

PRACTICAL MEDICINE.

Observations on the Use of the Hydrocyanic or Prussic Acid in Pertussis, or Hooping Cough. By Edwin P. Atlee, M.D. of Philadelphia.

From the numerous cases in which I have prescribed the acid in hooping cough, and an attentive observation of its powers in this appalling disease, when unattended by any other, I confidently recommend it to the medical profession. In no instance has it proved deleterious to my patients, but rather seems to have destroyed a previous predisposition to croup and catarrh.

The following is the course pursued. During the first, or what may be termed the inflammatory stage of the disease, I resort to the general depletory agents, if called on at all. Usually, however, parents seldom apply for medical advice until the second, or spasmodic stage, or that in which the hoop is clearly discerned. If, on inquiry, the bowels have not been freely evacuated, a full dose of calomel and rhubarb, according to the age and condition of the patient, is prescribed. If, to use the common phrase, "the child is much stopped up with phlegm," emesis is produced by antimonial wine, which, when judiciously prepared, I prefer to any other emetic. After this, the syrup is given as follows:

For a child six months old, one drop of the acid to one ounce of simple syrup; a tea-spoonful twice a day. If no uneasiness, dizziness, or sickness is produced within forty-eight hours, the same quantity is given three times a day. From six months to a year, the same may be given four times a day.

From 1	to 2	years of age,	Hydrocyanic acid, gtt.	ij.,	Syrup, ℥i.
2	3	do.	do.	iij.	do.
3	6	do.	do.	iv.	do.
6	12	do.	do.	v.	do.
12	15	do.	do.	vj.	do.
15	20	do.	do.	vij.	do.
20	30	do.	do.	viij. to x.	do.

A small or large tea-spoonful being the dose in each case, repeated as often as close observation of its effects will warrant. I have never yet given it more than four times a day.

Having tried the imported acid, and found it entitled to little reliance, I have for the last six years prescribed that prepared in this city by our judicious chemists, Furr and Kunzi, according to the formula of Mr. Brande. It contains four and a half per cent. of pure prussic acid of Gay Lussac, and is therefore not so strong as that recommended by M. Majendie.

Believing that the acid might be efficacious in spasmodic asthma, I requested my young friend, Dr. Isaac Parrish, late resident student of the Philadelphia Alms-house, to try it. He accordingly prepared the syrup in the proportion of four drops to the ounce, and gave a tea-spoonful every two hours, with decided benefit, The patient experiencing great relief in a few hours. This case, he states, to have resisted any impression from the other ordinary remedies.—*American Journal of Medical Sciences.*

Cure of Tic Douloureux by Stramonium. A young lady, who had suffered for many years from tic douloureux, (the attacks of which terminated sometimes by the swelling of the cheek or of the lip of the affected side,) had employed a number of remedies, without success. Dr. Pott cured her in the space of six weeks, by applying the actual cautery to the arm, and giving her, internally, eight or fifteen drops of tincture of stramonium every three hours.—*Beitraege Mecklenburgischen Aertze,* and *Dublin Journ. of Med. and Chem. Sciences.*

Sulphur as a Preservative against Measles. Dr. Tourtual, a Dutch physician, states that, at a period when measles were epidemic, all the children who were under treatment with sulphur for itch escaped the disease; and that those who were taking sulphur for the cure of hooping cough enjoyed the same immunity. Finally, he says that many children who were given a mixture of sulphur and camphor, and to whom these medicaments were applied by frictions, were not attacked with measles, whilst those who were not subjected to that medication were affected. —*Kleinert's Repertorium*, and *Gaz. Médicale.*

Leucorrhœa. Dr. Kopp, in a late number of *Hecker's Annalen*, recommends the following mode of treatment of leucorrhœa, which he says he has frequently employed with advantage. A piece of sponge, of proper size to fill completely the vagina, is to be dipped into the following solution and introduced into that canal at night before going to bed. ℞. Decoc. Ratanhiæ, ℥xij.; Ext. Ratanhiæ, ℥ss.; Tinct. Catechu. ʒiss.; Tinct. Kino, ʒiss. M.

Dr. Cless, in the *Archiv. fur Medizin Erfahrung*, states that he cures almost all the cases of leucorrhœa that occur in this hospital at Stutgard with cubebs.—*Gaz. Med.*

Hysteria. Professor Chiappa states, that enemata of iced water immediately dissipate the symptoms which characterize the hysteric paroxysm.—*Annali Universali.*

PRACTICAL SURGERY.

Utility of Malt Poultices. In a recent number of the *American Journal of Medical Science*, Dr. WILLIAMS relates several very interesting cases of severe and offensive ulcerations, in which the malt poultice was applied with great and rapid advantage. He prepares it in the following manner: Stir into good boiling beer as much ground and sifted malt as will be sufficient to form it into a poultice of a proper consistence; spread it thick upon cotton or linen cloth, and cover the surface of the poultice with about a table-spoonful of the best yeast, and lay the poultice thus prepared upon the ulcer. Spread the poultice much larger than the ulcer, and change it two or three times in the course of twenty-four hours. When barley malt cannot be obtained, oatmeal will answer. The ulcer will be sweetened, and will discharge bland matter in twenty-four hours; yet it will be advisable to continue the poultice three or four days.

We think, with Dr. Williams, that many substitutes for the malt poultice have lately been introduced into surgical practice, which are much less efficacious in ill-conditioned and sloughing ulcers, and even in ulcers which have assumed a gangrenous appearance.

On the Application of the Actual Cautery in Vesico-Vaginal Fistula. Condensed from a paper by Dr. KENNEDY, in the *Dublin Journ. of Med. and Chem. Sciences*, Nov. 1832.

A FISTULOUS communication between the bladder and vagina inflicts upon the patient the greatest distress and vexation, and not unfrequently the surgeon finds great difficulty in effectually relieving the disease. This injury is often produced by mismanagement during labour; the accoucheur either too long delaying the delivery of his patient, until the pressure produces destruction or sloughing of the parts, using instruments violently, or forcing the catheter through the urethra or neck of the bladder; and, secondly, in these affections being considered by many, if not irremediable, at least to promise so little chance of cure, as to induce them to try only palliative treatment. The worst case Dr. K. ever met with was produced by violence *in primo coitu*, in a newly married woman: the vagina and bladder formed one cavity; and so completely was the septum destroyed as to preclude the possibility of relief by any operation.

Various plans have, at different times, been recommended with a view to the cure of this distressing complaint. By some, the introduction of a catheter into the bladder, and the detention of it there for some time, has been supposed sufficient for this purpose. Others have recommended that pressure should be made over the aperture, with a view to prevent the urine escaping through it, and to cause it to close; and a host of sufficiently ingenious contrivances have been invented to endeavour to produce this effect: of these, the elastic bottle, made to fit within the vagina, appears to answer best. Again, a combination of these plans of treatment has been recommended; and this constituted Desault's method, which was long adopted in the schools. Experience, however, has unfortunately proved that these plans, although serviceable in slight cases, and where had recourse to immediately after the occurrence of the accident, are quite unavailing in cases of long standing, or where the opening is considerable. More enterprising practitioners have attempted to produce a union of the edges of the aperture; and with this view, after paring them with a knife or scissors, have fastened them together by means of sutures. The difficulties in this operation are very considerable; whilst, to afford a likelihood of success, it is frequently necessary to repeat it again and again. Mr. Earle speaks of his performing the operation so often as thirty times in the same case, before success crowned his efforts. Now, although an occasional cure is undoubtedly effected by the suture, yet the difficulties* and fatality attending it oppose such obstacles to the operation, that medical men are, in the great majority of cases, deterred from having recourse to it, deeming it preferable to resign the unhappy female to a life of wretchedness, and leave her an object of disgust, not merely to herself, but to all those about her, than to risk having recourse to a hazardous operation, with (at best) but a very questionable[*] chance of success. Caustics and stimulating ointments have been tried for the purpose of promoting union of the fistulous edges: the results attending their application have been quite as unsatisfactory; while the difficulty of confining their operation to the margins of the aperture, and the risk of their injuring the interior of the bladder, in a great measure preclude their use.

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* Mr. Earle, in his lecture on the operation of suture in vesico-vaginal fistula, points out these difficulties in very strong and correct language: we shall here merely enumerate them. The narrow space for operation, continual flow of urine, which blunts the delicate instruments necessary; great sensibility of the parts engaged, their disposition to slip from the instrument; the impression made on the pelvic viscera by a cough or sneeze; and great indisposition in the mucous surfaces to take on adhesive inflammation.—See *Medical Gazette* for November 14, 1829.

The actual cautery, as practised and recommended by Dupuytren,[†] appears to hold out a fair promise of relief, without risk, and even a likelihood of effectual cure in these distressing cases. At first, it might appear that the difficulties attending the application of a red-hot iron within the vagina would be very considerable, and that it could not be accomplished without much suffering to the patient, and risk of injury to the internal parts; in forming this opinion, we would be in error, as it may with very little management be effected, and that with perfect safety. There being some omissions, and a want of attention to certain precautions, in the account which we find in the Journal Hebdomidaire, of this operation, as practised by Dupuytren, I shall describe the manner in which I have usually performed it.

The instruments requisite are, a flat female catheter, two female sounds, a speculum, and cauterising iron. Where the aperture is very high up in the bladder, the speculum I prefer is the large two-bladed pewter one used by the French; as Weiss's small three-bladed speculum, which answers in ordinary cases, when the lesion is more within our reach, does not, in the former, so well expose the part, or protect the vagina from the iron. Where the opening is in the neck of the bladder, or urethra, the operation may be quite as well performed by dilating and protecting the vagina with curved spatulæ. In an operation of this kind, in which I lately assisted Dr. M'Dowel, three broad brass spatulæ, one introduced towards the perineum, and one at each side of the vagina, exposed the lesion remarkably well: this plan has the advantage of not pushing up the bladder further into the vagina, an inconvenience which it is next to impossible to avoid with the speculum. The cautery should be as nearly as possible the shape of the opening in the bladder, but somewhat larger. That which we shall generally find to answer is one of an oval shape, with its longer diameter placed transversely. As in the majority of cases, the longest measurement of the aperture is from side to side, and in such the difficulty of affecting an union is greatest; in some cases, however, the aperture has its longest measurement from before backwards, and then our cautery must be similarly constructed. The margin of the cautery ought to be rather more raised than the centre, as our object is to touch the edges of the fistula without injuring the mucous membrane of the bladder.

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[*] Mr. Earle succeeded in curing only three cases in this way, although he speaks of so many as twenty-one patients afflicted with this disease having come under his notice.—*Med. Gaz.*

[†] Journal Hebdom., No. 58.

In applying the cautery, we should place the patient lying forwards upon a table, with her limbs hanging over the ends, which should be near a window; elevating the pelvis upon bolsters or blankets placed under it. The limbs should then be separated, and the light thrown as much as possible into the vagina. Where sufficient light cannot in this way be procured, a candle must be used. The speculum is to be introduced, and the lesion brought into view; a flat female catheter must now be passed through the urethra, and placed across the opening, within the bladder, taking care, at the same time, to reduce any protrusion of the vesical mucous membrane, and retain it out of the reach of the cautery. When the opening into the bladder is very considerable, or the catheter is insufficient, it may be necessary to pass a second instrument through the urethra to effect this object. I have found the introduction of two female sounds answer remarkably well, where a second instrument was necessary. As folds of the vaginal mucous membrane sometimes protrude between the blades of the speculum, the operator must guard against this, and examine whether the instrument be so adjusted as to prevent the vaginal passage being injured by the iron; taking care that the interior of the bladder is well protected, and the edges of the aperture completely within his reach. Having satisfied himself in these respects, he is carefully to introduce the cautery, heated to a white heat, and, having steadily touched the edges of the fistula, to withdraw it and introduce a pledget of lint dipped in cold water, after which he may gradually remove the speculum. The cautery must only touch the part, for if retained too long in contact with it, might produce a sloughing eschar.

The operation is extremely simple, and performed in a minute; and although the name of the actual cautery sounds rather harshly, its application is in my mind, by no means as severe, or attended with such suffering, as the suture. The patient should be put immediately to bed, and strict quiet enjoined. The after treatment necessary is merely to keep the bowels gently open, and pay attention to the abdomen, lest tenderness should set in: this I have but once known to occur after the cautery; and then it was relieved, immediately, by warm stuping and aperients. After the immediate irritation has subsided, it is necessary to introduce a gum elastic catheter into the urethra, and retain it in the bladder, to ensure the urine's passing through it; a precaution the more called for, as, in some cases of long standing, this passage has become so collapsed as to be almost impervious. However, in cases where the catheter, on being introduced, passes through the fistula into the vagina, it is better not to leave it in the bladder, else it will do more harm than good. In such it will be sufficient to pass it into the bladder once or twice a day, to endeavour to restore the urethra and bladder to their proper state, by bringing the urine in its natural direction. It is necessary that the patient should retain the recumbent posture, and remain perfectly quiet while under treatment; and this point cannot be too much insisted upon. We should also ascertain in what position, namely, whether lying on the back, on one or other side, or the abdomen, she can retain her urine for the greatest length of time, and cause her to remain in that position as much as possible. This has two recommendations: in the first place, it prevents the urine from constantly escaping out of the fistulous aperture, which interferes with the union of its margins, and progress towards a cure; and in the second, by retaining the urine as long as possible, the bladder, which from being continually empty, had become contracted, is, by this means, gradually distended, and rendered more capable of fulfilling its office of reservoir. By attending in this way to position, and the situation of the fistula, the bladder will be induced to contain a considerable quantity of water, in which it is assisted by the transverse distention observed in it as the effect of pregnancy. It is very desirable, however, with a view to recovery, that the urine should be induced to pass through the urethra, and not by the fistula; and, if the plan here recommended interfere with this, it is better to let the patient assume the position in which the urine escapes through the urethra, if it does so more in one than another.

The effect of the cautery is to produce a thickening of the margins, and consequent contraction and diminution of the aperture, and ultimately an adhesion of its edges, closing it up altogether. Upon the size and position of the aperture will depend the greater or less likelihood of perfect cure.

The operation may require to be several times repeated. Whether by persisting in repeating it sufficiently often, we should, even in the majority of cases, succeed in closing the aperture, I cannot say, but rather think not. Fortunately, however, it does not require that the aperture should be actually closed to enable our patients to retain their urine, as a very good substitute for the adhesion of the sides of the fistula occurs in the extension of its margin or lip across the aperture, thus forming a kind of valvular closure of it, by which means the bladder becomes capable of retaining the urine almost as well as if the opening were closed. In a patient whom Dr. Green saw with me, this effect was produced in a striking degree; and although her urine was constantly escaping from her before the cautery was had recourse to, she was enabled afterwards to retain it without difficulty for six or seven hours. In a case which Dr. Collins saw with me, although the operation was performed six times, yet the aperture did not completely close; but the thickening of the margin of the fistula took place, in consequence of which the woman was able to retain her urine throughout the entire night, and for several hours (even when walking and using active exertion) during the day, although on her coming to me it was constantly escaping.

With these proofs, then, of the utility of this plan of treatment, I can have no hesitation in recommending its adoption to those whose opportunities afford them the power of putting it to the test, trusting that further experience may add, to greater facility in its performance and perfect freedom from danger, the two advantages which it undoubtedly possesses over the needle, that most important advantage of all, a greater certainty of cure.

Dr. M'Dowel states, in a letter to Dr. Kennedy, that he has "tried the actual cautery in two instances of vesico-vaginal fistula with considerable success."

Hypertrophy of the Tongue, by Dr. Wells. (*American Journal of Med. Sciences.*)

A daughter of George Roberts, of Lexington, aged six years, was brought to Columbia for professional assistance in May, 1829, with an enormous enlargement of the tongue; otherwise she was in good health and a fine robust girl.

The following are the dimensions and state of the tongue at the time: length as it remained at rest and hung down over the chin, from the superior incisors to its apex, two and a half inches; circumference just in front of the lips, six inches; breadth from one angle of the mouth to the other, a little more than two inches. It had undergone a very considerable change in structure, was much more dense than natural, and not subject to change in its dimensions by the action of its own muscles, or, if at all, very slightly so; its motions otherwise were sufficiently free; upper surface smooth; inferior covered with the cicatrices of old ulcers, several of which, where the tongue rested upon the alveolar processes of the lower jaw, but imperfectly healed; colour darker than natural. Within the mouth the tongue had undergone no apparent change, except a moderate increase in width and thickness. She had formerly suffered much from inflammation and ulceration of the mucous membrane of the tongue, but this difficulty had been obviated for the last six or eight months by keeping the organ covered with cloth bags, which, becoming immediately saturated with the mucous secretions of the parts, afforded a complete protection from the external air. If these bags were omitted for a few days, the surface became very sore and painful. The front teeth had been displaced from the lower jaw by the long-continued pressure of the tongue. The lower lip was folded downwards. The anterior portion of the superior maxillary bone had undergone a slight curve upwards, the inferior a much greater curve downwards, so that, while the back teeth came in contact, the front were an inch asunder, or rather the space between the upper teeth and the corresponding alveolar processes below was something more than an inch. She managed to eat by placing the morsel of food between the back teeth with her finger; fluids were introduced into the mouth through a tube, such as the spout of a coffee-pot: could articulate with a good deal of distinctness.

We could obtain nothing very satisfactory of the history of this case from the father, by whom she was accompanied. Her mother had died during her early infancy, and she had been placed with her grandmother away from him, the parties not of the most intelligent class. It seemed, however, from the father's statement, that the difficulty commenced when she was about eighteen months of age, with an attack of what we suppose to have been common glossitis: the tongue became suddenly swollen, and protruded from the mouth, continued in that state for two or three weeks, when the swelling gradually subsided, and it was again brought within its proper limits. During the next two and a half years she had repeated attacks of a similar character; worse, and of a longer duration in cold weather. All that he could say of the constitutional symptoms at this period, was, that "when the tongue swelled the child cried a great deal, and was very sick; and the old lady was in the habit of dosing her frequently with salts."

For the last year or two there seems to have been no particular change in the dimensions of the tongue, save a gradual increase corresponding with the general growth of the system.

Not considering it within the scope of medical science to bring the tongue back to its normal state, and being confirmed in this opinion by that of several of my medical friends, the removal of that part external to the mouth was proposed and acceded to, and would have been done by one stroke of the knife, but for the refractory character of the patient and the timidity of the father. The following plan was resorted to, and is on the whole perhaps the best operation in such cases and with such patients; but, in adults, where the surgeon can have the convenient use of all his resources for controlling hemorrhage, there can be no objection to free excision, the least painful mode of operating.

The child having been freely purged, and kept on a gruel diet for two or three days, a seton needle, half an inch broad, armed with a double ligature, was passed through the tongue from below upwards, cutting transversely; the ligatures were carried obliquely backward, and firmly tied on either side, so as to give to the remaining tongue a somewhat pointed appearance. The gush of blood on passing the needle through the tongue was very considerable, but almost instantly ceased on the ligatures being tied: twenty hours after the strangulated portion was removed by two strokes with a bistoury, from the centre outwards in the course of the ligatures, which was followed by a few feeble jets of blood from the lingual arteries, and a slight oozing from the substance of the tongue for a few minutes. There was considerable irritation and constitutional disturbance after the application of the ligatures, which required a small bleeding and an anodyne; these symptoms all disappeared soon after the final excision.

The dressings consisted simply in the application of a pledget of lint moistened with a saturated solution of chloride of lime, renewed three or four times in the twenty-four hours, and a handkerchief tied over the mouth to protect it from the air. On the fourth or fifth day the child was walking about in the open air, and appeared to suffer very little: at the close of the second week the wound was nearly healed, and she was taken back into the country, with a request that she might be brought to Columbia again in four or five weeks; which was accordingly done. On her return, the wound was perfectly cicatrized, and the body of the tongue reduced to its natural dimensions. She had full command of her lips; and it was very evident that the jaws would soon be brought into their proper relation to each other by the natural action of the muscles. She could articulate with sufficient distinctness, and give all the letters of the alphabet their proper sounds.

Four months after this her father called on me, and said that his daughter had fully recovered, the jaws had lost their curvatures, all the teeth coming in contact. Mr. R. called on me again a few weeks since, and informed me that his daughter enjoyed good health, had felt no symptom of the old complaint in her tongue since her recovery from the operation.

Extirpation of the Testes and Penis, affected with a Cancerous Disease. By J. C. Hall, M.D. (*Ibid.*)

The following case, given from memory, illustrates the propriety of pursuing with the knife a disease of the most malignant nature, and threatening a rapid destruction of life.

Mr. S. in mounting his horse many years ago, injured the left testicle, which, after causing much pain, dwindled away. Eighteen months since, this testicle grew irritable, painful, and much enlarged. It resisted every attempt at dispersion, and, occasioning much constitutional derangement, reduced him to the lowest extremity. In the fall of 1830, I saw him in consultation with Drs. Dawes and Causen. His aspect was bloated; limbs œdematous, and the lower extremities very painful from the distention; his strength was prostrated, and he might almost be pronounced moribund. The disease of the testis had burst through the inflamed and almost gangrenous scrotum, and was pouring forth a most luxuriant mass of fungus, easily bleeding, and emitting a most horrid stench. Much of this fungus had been clipped away by the patient and his surgeon, but still it was rapidly reproduced. As there was no alternative but immediate death, or an operation, the latter was determined on, but with no other expectation but that of deferring the fatal event. The patient having been revived by cordials, the testicle and all the affected portion of the scrotum was removed. The diseased mass, upon examination, appeared to arise rather from the tunics of the testicle than from the gland itself. Mr. S. was near sinking after the operation, but finally rallied, and the wound continued in a healthy condition for seven or eight weeks, when it assumed a malignant appearance, presenting all the indications of cancerous action. Defying every effort to arrest its progress, the knife was again resorted to, and the remaining testicle and much of the scrotum, was extirpated, embracing every diseased portion. Again the wound did well for some time, but, putting on the same threatening appearance, all the remaining scrotum was cut away, together with a portion of the perineal surface which had become affected.

These several operations were thought at the time to embrace every diseased part, and even more, but the wounds never healed, and finally, after the lapse of a year from the first operation, the disease recurred, and spread over the perineal integuments and the posterior inferior part of the penis, destroying the urethra to the extent of an inch, and affecting the lateral parts of the corpora cavernosa.

Though despairing of success, yet, at the urgent request of the patient, a final operation was decided on. Carrying the scalpel deeply through the integuments and fat upon the pubis, we divided the suspensory ligament and the fascia coming from the thigh to the penis. Thus detaching it from the pubic arch, we dissected its crura from the pubic rami, and divided them separately.

The urethra was divided at a very short distance from its exit through the triangular ligament. The operation was completed by carrying the knife beyond all the diseased parts visible, and excavating a large portion of the perineal surface. Eight vessels were tied, as necessarily cut, and no secondary hemorrhage of importance occurred. The wound left was very large, and the most soothing application was found to be fresh cream. The cure has been effected rapidly, perfectly, and we trust permanently.

Whether the disease with which Mr. S. was affected, was truly cancerous or not, does not depreciate the lesson of perseverance thus taught. His disease was rapidly hurrying him to his end, and had not his resolution given boldness to the surgeon, he would have been abandoned to a most horrid death.

MEDICAL ELECTRICITY.

THE following experiments appear so truly wonderful that, but for the good authority by which they are supported, I should feel unwilling to give them a place here. The remarkable results which accompanied them can scarcely be explained as coincidences, and they appear to open the way to new and important inquiries; but numerous observations and experiments must be made before we can be warranted in drawing any certain conclusions on the subject. P. Smith, of Fordham, to whose experiments I have already alluded, having relieved numerous patients, labouring under gout, rheumatism, and other painful affections, was induced to try the effects of electricity upon intermittent fevers. He intended to employ it as the cold stage was coming on, but his first patient having mistaken the time of the accession of the fit, he did not apply it until the hot stage had commenced: he insulated the man, and caused him to receive sparks at the epigastric region, while he took them from him along the course of the spine; the pulse was speedily reduced thirty beats per minute. The next patient was electrified on the coming on of the chill, which it immediately checked; nevertheless the hot stage ensued, when electricity was again applied, and, as in the former case, it reduced the pulse thirty beats: there was no return of the paroxysm, but the application of electricity was repeated for some days. Another case of ague, which had lasted four months, and obstinately resisted bark, arsenic, and other medicines, was quickly cured by a few applications to electricity. The most extraordinary circumstance remains to be mentioned. P. Smith himself had held the ball with which he took sparks from his first patient, during the hot stage. In the same evening, he found himself unwell; but had no suspicion of the nature of his complaint, until the recurrence of the paroxysm convinced him that he had become the subject of ague. He allowed these to recur to the seventh time, before he attempted the cure by electricity, which was speedily effected, being the second case already alluded to. As he had never been the subject of ague, and had not been more than usually exposed to causes calculated to give rise to it, he felt persuaded that it had been communicated to him by electricity from his former patient.

In order to ascertain this, he was desirous of trying experiments on some persons labouring under a disease which was inflammatory, but not considered infectious; he, therefore, had one of his men vaccinated. On the seventh day, the man was placed on the insulating stool, and connected with the positive conductor; a small incision was made with a lancet in the pustule, and an incision was also made in the arm of a lad with a new lancet; a wire four inches long was passed through a glass tube, one end of which touched the pustule on the man's arm, and the other the incision on the boy's arm, the electrification was continued for eight minutes, when the boy was removed. His arm was daily examined, and it was found that he was as completely vaccinated by electricity as any person could be by the usual mode. My friend afterwards endeavoured to communicate the virus to two girls, by passing the electrical fluid from the pustule on the boy's arm, who had been vaccinated by electricity, to incisions made in theirs. For three days the medical gentleman supposed it had taken effect; but, on the fourth day, all appearances of vaccination died away. These girls were, however, afterwards vaccinated in the usual way in four places, two of which died away, and the other two took but very slightly. My friend Charles Woodward afterwards repeated this experiment upon an infant, the child of one of his friends, but with this difference, that he did not allow the conducting wire to come in contact with the child's arm. The electric fluid was consequently transmitted in the form of small sparks. The disturbance which these produced, though trivial, prevented the application from being prolonged for the full time, which my friend would have wished; inflammation however succeeded, and, until the sixth day, was such as to induce the medical attendant to believe that the vaccination had been complete; from that day, however, the pustule died away.

Circumstances, which it is wholly foreign to this work to relate, interrupted the continuance of the research. The facts already related have come to my knowledge at too late a period to allow of my pursuing the investigation; but I trust it will not long continue neglected.—*From an Essay on some of the Phenomena of Atmospherical Electricity, by* Luke Howard, F.R.S., *in the Appendix to* Dr. Edwards *on the Influence of Physical Agents on Life.*

MISCELLANEOUS.

To the Editors of the London Medical and Physical Journal.

Gentlemen: The very singular case of a patient in the Hôtel Dieu, recorded in the February number, p. 153, gives rise to a variety of curious speculations and inquiries relative to the cause of his paralysis.

1. "A slight eruption had followed the wound of the finger, in the form of pustulous pimples." It is not stated on which part of the body these appeared, or of what the matter was composed; but that they had disappeared when he was admitted into the hospital. Query. Might not this have been an effort of nature to relieve herself of some aqueous or serous humour, which, having been perhaps checked by cold or improper treatment, might be repelled, and thus produce a serous deposition or effusion in or on the spinal chord, from whence the nerves of motion take their rise?

2. "The paralysis commenced in the lower extremities and on the right side, and extended to the trunk, and, lastly, to the chest and upper extremities affecting the lungs partially, but not the diaphragm." Here we may observe, that it commenced at the greatest distance from the heart, as the source of circulation, and gradually extended towards it, affecting the lungs partially and probably even the heart itself. From the limbs being free from pain, stiffness, or convulsive movements, it appears that the muscles were not affected, but the nerves both of motion and sensation. It is here a singular circumstance that the organs of sense, as seeing, hearing, smelling, and tasting, were not affected; and it, therefore, appears that the nerves of sensation from the brain, which supply these organs, were in a state of healthy action.

I had, during the last summer, the opportunity of seeing the following case in Islington workhouse, which I here give from notes taken at the time. The patient had lost all power of sensation, and apparently of speech, whether through deafness or dullness in the auditory nerves could not be determined. The most singular fact in this case was, that in whatever position his limbs were placed, so they remained, but without any rigidity, as they might be altered at the pleasure of those who placed them. He therefore appeared rather to have lost the powers of *volition* than those of *motion*. The nurse said he would often remain in the same position for one or two hours, and sometimes even longer.

Mr. SEMPLE, in my presence, tried the following experiment: He raised one arm, the patient standing equally on both feet. On our return, after having gone round the wards, the nurse said he had stood thus three-quarters of an hour, and then fell back on his bed. Mr. S. then raised both arms: the patient stood on his feet, his legs were rather twisted round. He had held in his right hand, for some hours, a short pipe filled with tobacco, in the position of one who has just filled a pipe for smoking, with the forefinger placed on the bowl to keep in the charge. In this position he was placed, at a quarter past eleven A.M., and in less than a quarter of an hour after, just as we had left him, he gave a sudden scream, and fell back on his bed. His pulse was slow, but regular; his breathing almost imperceptible; and he seemed perfectly unconscious of any surrounding objects. He could walk about the yard slowly, without assistance, but was always watched. He generally sat on the side of his bed nearly all day, without speech or motion.

I know not what became of this case. His age, I think, was about thirty.

E. G. BALLARD.

Islington; 5th February, 1833.

Preservation and Reproduction of Leeches. Important Discovery. M. MOREAU, of Angers, has communicated to the medical journals the important discovery, made by M. BATTU, lieutenant in the revenue police, at St. Seurin, of a new and effectual method of preserving these valuable animals. In consists in placing them in a box, about three feet square, half filled with layers of rich homogeneous French soil. At the bottom of this box is inserted a small plate of tin, pierced with minute holes, and the top is closed with linen in order to prevent the escape of the leeches. The earth is moistened with water every eight days. By this process he has preserved the same leeches several months, and has even seen them reproduce. In a second letter on this subject, M. Moreau states the results of some of his own experiments on the matter. Twelve leeches were placed in one of these boxes several months since, all in a state of emaciation and debility from protracted abstinence. On examining the box a few days since, nine of the leeches were found in full health, increased in size, and there was also found a great number of ova, and minute full-formed leeches produced in the box itself. The earth proper to be employed is of a reddish-brown colour, and possesses a strong power of imbibition. It must not lie dry, pulverulent, or be mixed with the roots of grass, small stones, bits of wood, &c. The temperature of the place, too, M. Moreau deemed of importance to be taken into consideration. In the successful experiment now detailed, the temperature was maintained at about 50° Fahrenheit.

The druggists who trade with our East and West Indian possessions, would do well to submit these important facts to immediate experimental investigation.—*Lancet.*

CHEMISTRY.

Composition of the Blood in Jaundice. My friend, Dr. Corrigan, having transmitted to me a specimen of blood taken from a woman labouring under jaundice, I undertook the analysis, in order to verify the researches of Lecanu, and some analyses made by myself at a former period.

The blood had separated perfectly; the clot, not buffed, lay soft and loose at the under surface. The superficial arterialization was very imperfect, (the vessel had been closed air-tight by bladder.)

The serum was of a deep yellow colour, browned turmeric paper, was salty to the taste, and, when mixed with muriatic acid, became vivid grass green in colour. Sp. gr. 1029.25.

The quantity of blood sent to me weighed 3168 grains, consisting of

Serum	1420
Clot	1748

A quantity of serum having been carefully dried, was found to consist of

Water..................	899.1
Solid matter	106.9
	1000.0

A quantity of clot having been dried, was found to be composed of

Water	656
Solid matter	344
	1000

The salts were found, by appropriate re-agents, to be present in their natural proportion. Their quantitative estimation was not, in the future steps of the analysis, attempted.

The dried serum having been reduced to very fine powder, was boiled in dilute alcohol, and afterwards in very strong alcohol. The alcoholic solutions were mixed together, and very much concentrated: they deposited successive crops of common salt, and were alkaline. They were finally evaporated to dryness.

The dried serum, when it ceased to yield any soluble matter to boiling alcohol, was weighed and estimated as albumen.

The dry residue of the alcoholic solutions was digested in cold ether, which dissolved most of it, and assumed a gold colour. The undissolved matter was boiled in a small quantity of alcohol, which dissolved it, and, on cooling, deposited flocculi of phosphuretted fat. The ethereal solution, when evaporated, gave a residue of the yellow biliary colouring matter, and an oily liquid which floated quite separate from it; (*oil of Babington.*)

The clot was washed with water carefully until the fibrine remained white; it was then carefully dried and weighed.

The liquor in which the clot had been washed was heated to 200°; the mixture of albumen and hematosine coagulated, and the quantity of the former having been gotten by calculation from the quantity of water that existed in the clot, as serum, and added to the albumen before obtained, we have the entire quantity of albumen in the blood, and the residue gives, of course, the colouring matter.

In former analyses of the blood in disease, I usually icinerated the hematosine, in order to determine the quantity of oxide of iron that I could obtain: but, as the iron exists in the hematosine, not as oxide, but probably as an ultimate constituent, and is consequently proportional in quantity to that of the hematosine, I do not now think it necessary to determine its amount separately.

The quantitative results of the analysis are as follows:

Water	762.28
Albumen	71.4
Fibrine	9.8
Hematosine	126.7
Phosphuretted Fat Oily matter and yellow colouring matter	2.0
Salt, loss, &c.	34.82
	1000.00

This analysis fully confirms the result of Lecanu as to the existence, in the blood of jaundiced patients, of the yellow colouring matter of the bile, and also as to the absence of cholesterine. In consequence of this latter principle being often a constituent, in minute proportion, of healthy blood, I sought for it carefully, but could not detect any trace of it. My results, however, differ in an important relation from those of Lecanu: he found that the quantity of colouring matter was less than in health; in the foregoing analysis, it is very nearly the exact healthy average. I am not inclined to attribute great importance to the difference between our results in this respect, as the quantity of that principle varies in health between limits extending beyond both.—Mr. KANE; *Dublin Journ. of Med. and Chem. Science.*

BOTANY.

Secretion of Water by certain Plants. Professor I. C. **Treviranus**, of Breslau, has lately given his attention to the subject of the watery secretion of the leaves of plants. The Nepenthes, Sarracenia, and Cepholatus have long afforded the most striking examples of this function. Rumple's observation, that the water of the tankard-shaped leaves of the N. distillatoria is always pure, militates against the supposition that it comes from without. He also remarked that when the lid of the N. Phyllamphora is open, the water is diminished one half by solar evaporation, which, however, is restored at night. The structure of the goblet-like leaf, as observed by Treviranus, is like an actual secreting organ, and adds a strong reason for thinking that the plant supplies the water. He finds the parietes of the leaf of N. distillatoria traversed by a multitude of proportionably large anastomosing veins, which contain many true spiral vessels. The upper half of its inner surface is covered with a blue rind, as parts often are which are to be protected from the action of water; the under half is, on the contrary, shining and full of small gland-like eminences, directed downwards, and having a hole almost visible with the naked eye, which is uncovered with the cuticle which the remainder possesses. Through these, he thinks, is the water secreted, and it reaches generally to their level in the middle of the leaf: it is remarkable, that the inner or under surface of the lid exhibits a similar structure, but whether it also secretes water future observation must discover. Sir J. Smith's remarks on the construction of the lid of the Sarrencia flava and adunca are sufficient to invalidate Linnæus' opinion, that the leaves of this genus, as well as the nympheæ, were intended as natural reservoirs for rain water. In the Sarracenia there is no particular apparatus, as in the Nepenthes, for the secretion. Macbride's observations demonstrated, on the edge of the Sarracenia adunca, a sweet substance that allures insects, which, creeping into the funnel of the leaf, arrive at the water, and, being hindered from returning by the hairs directed downwards, are drowned. It is reserved for future investigation, to discover what gives the sweet taste to the Nepenthes and Cephalotus which is mentioned, and how the insects are killed, as nothing appears to hinder their creeping out again.

Treviranus has examined particularly the watery secretion of the Amomum Zerumbet, which was not noticed by any botanist, except cursorily by Murray. The spikes stand on a stalk a foot and a half long, rising from the root, and are the size of a hen-egg, or sometimes as large as a goose-egg; they consist of a great number of broad deep scabs which lie over one another, imbricated, and enclosing a space between them. The scales are of a leathery consistence, each of them enclosing a small colourless flower, of a more cuticular nature. At the commencement of the flowering, the spikes are full of clear water, which is nearly without smell or taste. By gentle pressure, it comes from between the scales, and, if it be emptied in the evening, it becomes in great part renewed by morning. The lower half of the scale, which contains no flower, is found as full of water as the rest. Treviranus, therefore, considers the inner inferior part, where the scales are connected with the stalk, the place where the water proceeds from. The water lasted during the whole flowering time, that is three weeks, but as it advanced, it did not preserve its original pureness; it became somewhat ropy, and got the smell of the bruised leaves of the plant, without, however, losing its transparency in the least. Dr. Goppert subjected a portion of it to chemical analysis, from which it results that the fluid between the scales of the spikes of the Amomum Zerumbet consists of pure water, containing a small quantity of vegetable fibrine and mucus; the quantity of which last is different at different periods of the flowering time.

He has also observed a tasteless water in the corolla of Moranta gibba. —*Treviranus und Tiedemann, Zeitschrift;* and *Dublin Journal of Med. and Chemical Science.*

INTELLIGENCE.

KING'S COLLEGE, LONDON.

Professor Jones delivered the introductory lecture to his course on Political Economy, on Wednesday the 27th ult.

Professor Burnett will give two courses of lectures on Botany during the present session; the one an extended and practical, the other a short and popular course. The lecture introductory to both courses will be given on Wednesday the 27th instant, at three P.M.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.

The Report of the Treasurer for the year 1832, with the Surgeon's Report, drawn up by Messrs. Hancock and Bedford, the house-surgeons, has just been published. We are equally gratified and astonished at the very small expenditure which has been incurred during the last year; and, when we consider the great number of patients that have attended, (so many of whom are indebted for the preservation of sight to the skill and attention of the surgeon, Mr. Guthrie, and the assistants he has taken so much pains to instruct in the treatment of the diseases of the eye,) we feel justified in asserting that, in no other similar institution, is so much serious affliction alleviated at such trifling cost. Notwithstanding the trouble Mr. Guthrie has taken, by the repeated publication of cases of ophthalmia which have been successfully treated in the hospital by the use of the argentum nitratum ointment, to prove the great and speedy efficacy of this treatment, when it is properly employed, we know there are some surgeons who have never yet tried its effects; and we also know that their patients have much reason to regret their obstinate adherence to preconceived opinions and practice, which ample experience must have shown them are not to be relied upon, and the fallacy of which they might quickly be convinced of by a few visits to this establishment.

The number of patients admitted during the last half-year amounts to 1021, making a total, for 1832, of 1705. Thirty-one operations have been performed for cataract, and all succeeded in restoring good and useful sight. The most remarkable cases are those of Ann Frehorne, a paralytic woman, aged eighty-two; Frederic Herbert, who was born blind, and remained so until he was thirteen years old; and four children, in one family of the name of Griffiths, all of whom were born blind, or nearly so, and restored to sight by operation. The number of operations for cataract has been few, in consequence of its having been thought fit to try a particular and private remedy, supposed, by a gentleman of the name of Marshall, to possess the property of dissolving a cataract in its early stage. Twenty-seven cases were placed under his management, but the results of his treatment are by no means satisfactory; for in no one instance does the report state that any decided benefit was obtained from it.

Several cases are mentioned to show the mischievous results of purulent ophthalmia, when uncontrolled by proper treatment, and the great advantages which are derived from that which is peculiar to this hospital. From our personal experience at this and other hospitals, as well as in private practice, we can add our testimony to the great superiority of the treatment followed by Mr. Guthrie, to that which is too commonly adopted, of large and repeated bleedings.

In every point of view, the Westminster Ophthalmic Hospital deserves the warm support of the public and the profession; and once more we urge practitioners, and more especially those who are medical officers of similar institutions, to take advantage of the opportunities which are here afforded of removing any doubts they may entertain as to the efficacy of this treatment in various cases of ophthalmia, which is tried upon so large a scale, and with such immense benefit to the patients.

MEDICAL EXAMINATIONS AT EDINBURGH.

We understand that a very important, and in our opinion a very desirable, alteration is ordered to be made in the medical examinations in the University of Edinburgh: *they are henceforth to be conducted in the English instead of in the Latin language.* That all medical practitioners should have had a sound classical education, we freely admit: and it appears to us equally desirable that they should be compelled to give sufficient proofs of their classical attainments when they present themselves as candidates for any medical degree: but we must at the same time maintain, the primary object of all medical examinations being to ascertain as fully as possible the professional qualifications of the party examined, that it is utterly absurd to conduct the examination in a language which very few persons indeed can speak with fluency or facility enough to enable them to do justice to themselves in expressing their opinions upon medical topics. It is quite notorious that much more apprehension of failure exists in the mind of most candidates, on account of the difficulty of maintaining a discourse in Latin, than from the fear of not being prepared to give the required and very proper proofs of their medical knowledge; and we believe it cannot be denied that any thing can be more barbarous, or more "innocent of grammatic rule," than the jargon called Latin which often "passes" at medical examinations. Surely, it would be wiser, and much more for the advantage of the public, (for whose benefit such examinations are instituted,) to give the candidate full and free liberty of speech, and to require him to speak his mother-tongue correctly, than to distract his attention from the chief object which should occupy his thoughts, by obliging him to seek for words rather than for ideas. We venture to say, that there is not one man in a hundred who goes through a medical examination conducted in Latin, who can, with such a stumbling block in his way, express himself to his own satisfaction. And, even supposing that all candidates for medical degrees were compelled to speak the Latin language with perfect purity and correctness, we doubt the advantages of imposing an obligation upon them, to comply with which much time must necessarily have been previously expended, which, *we think*, might have been more profitably employed. There are very few persons who succeed so completely in mastering the difficulties of a living language, even with all the advantage of residence in the country and constant intercourse with the natives, as to enable them to "unlock all their intellectual stores" when they enter into a lengthened conversation in it: the difficulties of speaking a *dead* language are tenfold, and can only be overcome by the application of years. To support the dignity and respectability of the profession, it is proper that its members should be men of a good and even liberal education; but their classical attainments may be sufficiently tested by obliging them to read Latin from any work that may be selected at the moment of examination.

APOTHECARIES' HALL.

To the Editors of the London Medical and Physical Journal.

Gentlemen: The enclosed circular letter has already been sent to the principal dispensaries in London; but, as it is impossible to forward it to all such institutions in the country, perhaps you will have the goodness to give it extensive publicity by inserting it in the London Medical and Physical Journal.

I am, gentlemen, your obedient servant,

John Watson.

DISPENSARIES AS SCHOOLS OF PRACTICAL MEDICINE.

Apothecaries' Hall; Feb. 7, 1833.

To the Physicians of ——— Dispensary.

Gentlemen: I am instructed by the Court of Examiners to call your attention to the notices relative to dispensaries, which were published in the regulations of the Court in September 1830, and in August 1832; and to remind you, that the time for acting upon them is now arrived.

The Court are ready to receive applications for the recognition of dispensaries, from the physicians attached to these institutions respectively; and, with the view of saving unnecessary trouble to the medical officers of these establishments, the Court have further instructed me to state, that they will recognise, as schools of practical medicine, such dispensaries only as shall give satisfactory evidence on the following points: viz.

"That the dispensary is situated in some city or town in which there is a medical school recognised by the Court.

"That the rules for the government of the dispensary permit the attendance of students, and that the physicians afford them opportunities of acquiring practical knowledge in medicine.

"That the dispensary (if within the limits of the jurisdiction of the Royal College of Physicians of London,) is under the medical care of at least two physicians, each of whom is a fellow, candidate, or licentiate of the Royal College; and, if beyond these limits, that it is under the care of at least two physicians, who, if not so qualified, are graduated doctors of medicine of a British university, of four years' standing.

"And that the apothecary of the dispensary is legally qualified, either by having been in practice prior to or on the 1st day of August, 1815, or by having received a certificate of qualification from the Court of Examiners,"

I have the honour to be, gentlemen, your obedient servant,

John Watson, Secretary.

N. B. Every certificate of attendance is to be signed by all the physicians connected with the dispensary attended by the student; and the Court especially request, that no certificate may be signed unless the pupil has been *uniformly regular* in his attendance.

LITERARY INTELLIGENCE.

The First Part of Professor Burnett's "Outlines of Botany," which we announced some time since, will be published the latter end of this month; and the succeeding fasciculi as soon as the engravings, which are in a very forward state, will permit.

MONTHLY LIST OF MEDICAL BOOKS.

[*Medical Works cannot be entered on this List unless a copy be sent for the purpose, the titles of Books having frequently been sent to us as published, which have not appeared for week, or even months, after.*]

The Cyclopædia of Practical Medicine. Edited by John Forbes, M.D., F.R.S., &c. Alex. Tweedie, M.D., &c., and John Conolly, M.D., &c. Part XIV. (published in Monthly Parts,) February 1833. Containing *Jaundice*, by Dr. Burder; *Kidneys, Diseases of*, Dr. Carter; *Lactation*, Dr. Locock; *Laryngitis*, Dr. Cheyne; *Lepra*, Dr. Houghton; *Leucorrhœa*, Dr. Locock; *Lichen*, Dr. Houghton; *Liver, Inflammation of*, Dr. Stokes; *Malaria, and Miasm*, Dr. Brown; *Malformation of the Heart*, Dr. Williams; *Medicine, Practical Principles of*, Dr. Conolly; *Melæna*, Dr. Goldie; *Melanosis*, Dr. Carswell; *Menorrhagia*, Dr. Locock; *Menstruation*, Dr. Locock.—Large 8vo. Sherwood, Gilbert, and Piper; and Baldwin and Cradock, London.

Outlines of Human Physiology. By Herbert Mayo, F.R.S., F.G.S., Professor of Anatomy in King's College, London; Surgeon to the Middlesex Hospital, &c. Third Edition.—8vo. pp. 476; numerous engravings. Burgess and Hill, London.

Part II., February 1833. Principles and Illustrations of Morbid Anatomy; adapted to the Elements of M. Andral, and to the Cyclopædia of Practical Medicine (with which it will correspond in size). Being a complete Series of coloured Lithographic Drawings, from Originals by the Author; with Descriptions and summary Allusions to Cases, Symptoms, Treatment, &c Designed to constitute an Appendix to Works on the Practice of Physic, and to facilitate the Study of Morbid Anatomy in connexion with Symptoms. By J. Hope, M.D., F.R.S., Physician to the St. Marylebone Infirmary.—Whittaker and Co., London.

Elements of Surgery, by Robert Liston, Fellow of the Royal Colleges of Surgeons in London and Edinburgh, &c. Part III.—8vo. pp. 409. Longman and Co., London.

Parts XIV. XV. and XVI. The Principles and Practice of Obstetric Medicine, in a Series of Systematic Dissertations on Midwifery and on the Diseases of Women and Children. Illustrated by numerous Plates. By D. D. Davis, M.D., M.R.S.L., &c.—4to. John Taylor, London.

The Royal Westminster Ophthalmic Hospital, Chandos street, Charing Cross. Report of the Treasurer for the year 1832; with the Surgeon's Report for the half-year ending 10th January, 1833, drawn up by Messrs. Hancock and Bedford, House Surgeons.

New Views of the Process of Defecation, and their Application to the Pathology and Treatment of Diseases of the Stomach, Bowels, and other Organs; together with an Analytical Correction of Sir C. Bell's Views respecting the Nerves of the Face. By James O'Beirne, M.D., Surgeon Extraordinary to the King, &c.—8vo. pp. 286.—Hodges, Dublin; Longman and Co., London.

A Demonstration of the Nerves of the Human Body. Parts II. and III.—Part II. The Lumbar and Sacral Portions of the Sympathetic and the Nerves of the Abdominal Viscera. Part III. The Cerebral Nerves. By Joseph Swan.—Large folio. Longman, London.

Principles of Physiological Medicine, in the form of Propositions; embracing Physiology, Pathology, and Therapeutics, with Commentaries on those relating to Pathology. By F. J. V. Broussais, M.D. Translated from the French, by Isaac Hays, M.D., and R. E. Griffiths, M.D. &c.—8vo. pp. 594. Carey and Lea, Philadelphia.

Researches on the Pathology and Treatment of some of the most important Diseases of Women. By Robert Lee, M.D., F.R.S., &c.—8vo. pp. 220. Highley, London.

The Hunterian Oration; delivered in the Theatre of the Royal College of Surgeons in London, on 14th February, 1833, by John Howship, Teacher of Surgery, and Surgeon to St. George's Infirmary, &c.

An Explanation of the Causes why Vaccination has sometimes failed to prevent Smallpox, and also a Description of a Method, confirmed by experience, of obviating such Causes. By Edward Leese, Member of the Royal College of Surgeons, and stationary Vaccinator in the National Vaccine Establishment, &c. Part II.—8vo. pp. 36.

APOTHECARIES' HALL.

Names of Gentlemen to each of whom the Court of Examiners have granted Certificates:

Jan. 31.
John Hawthornthwaite, of Newcastle-on-Tyne
James Kelly, Ballyshannon, Ireland
George Elisha Newth.

Feb. 7.
Thomas Banks, of Brierley, Staffordshire
Wm. Derington, Hinckley, Leicestershire
John Fountain Elwin, Bath
Brook Fishley, Ilfracombe
Thomas Maw Grisdale, Haxey, Lincolnshire
James John Greer, Bermondsey
Joseph Hayes, Margate
Donald M'Donald, Bristol
Henry Plank
Edward Webb.

Feb. 14.
George Chater, of Norwich
Henry Charles Sutton Dalzell, Weymouth st.
Charles Doble, St. Agnes, Cornwall
Septimus Godson, Hook Norton
Robert Gee, Brackley
Thomas Robinson, Haverill.

Feb. 21.
Roger Turner, of Oldland, W. Lewes
Alexander Farquhar, Chelsea
James Clarke, Pimlico
Thomas Relph Simonds, Wigton
Frederick Shallis Saner, Finsbury square.

METEOROLOGICAL REGISTER,

By Messrs. Harris and Co., Mathematical Instrument Makers, 50, High Hol

Jan.	Moon.	Rain gauge.	Thermometer. 9 a.m.	max.	min.	Barometer. 9a.m.	10p.m.	De Luc's Hygrometer 9a.m.	10p.m.	Winds. 9 a.m.	10p.m.	Atmospheric Variet 9 a.m.	9 p.m.
20	●		37	39	31	30.07	30.09	75	74	SE	SE	fine	cloudy
21			34	36	30	.10	.10	74	74	ESE	SE	foggy	fine
22			31	85	28	.17	.27	73	74	SE	SE		
23			30	36	29	.36	.36	74	75	SE	SE		
24			35	37	31	.25	.20	76	78	SE	ESE	fine	
25			34	36	34	.02	29.95	80	80	SE	SE	foggy	
26			36	40	34	29.92	.92	80	80	SSE	W		cloudy
27			39	42	36	.87	.82	80	80	SW	SW	fine	fine
28			40	44	40	.76	.63	80	80	WNW	W		
29	☽		41	41	38	.20	.13	80	82	SW	E	showery	cloudy
30			40	41	33	.32	.55	85	83	NW	NW	foggy	fine
31			35	39	35	.52	.31	83	83	WNW	S		cloudy
Feb. 1			37	40	36	.33	.46	82	83	N	SE		
2			46	52	41	28.80	28.68	85	83	SE	W	rain	cloudy
3		.07	45	50	43	.86	29.14	81	79	WNW	WNW	fine	fine
4	○		48	54	51	29.48	.64	78	79	W	W	rain	fine
5		.12	54	55	47	.68	.73	80	82	W	WSW	foggy	fine
6			50	54	48	.82	.66	82	81	WSW	SW		cloudy
7			52	55	48	.68	.75	80	80	WNW	WSW		fine
8			53	55	43	.52	.52	80	80	WSW	SW	cloudy	
9			45	46	42	.45	.59	80	80	NNE	WNW	rain	
10			47	52	45	.36	.25	79	79	WSW	SW	rain	rain
11	☾	.26	50	53	43	.22	.22	77	77	W	W	fine	fine
12			50	54	42	.40	.42	77	79	WSW	SW	cloudy	
13			43	50	46	.22	.11	79	78	W	WSW	showery	cloudy
14		.09	48	50	42	.09	.18	76	76	W	SW	fine	showery
15			43	44	35	.05	.22	76	75	N	NW	cloudy	fine
16			38	42	37	.46	.55	75	77	NW	NW	fine	
17			42	45	35	.42	.30	78	82	W	W	cloudy	sleet
18		.14	38	47	38	.33	.43	79	77	W	NNW	foggy	fine
19	●		44	45	42	.67	.59	75	77	NW	SW	fine	

In consequence of the frost in January, the quantity of rain cannot be given for that

TO CORRESPONDENTS.

We recommend the perusal of Dr. *and* Mr. D. Griffin's *excellent series of pape* Functional Disorders of the Spinal Cord," *contained in the 65th and 66th volume Journal, to a* "Physician" *at Manchester.*

We are obliged to Mr. L—d, *of Paris, for his offer, and we shall be happy to accept any he may* volunteer.

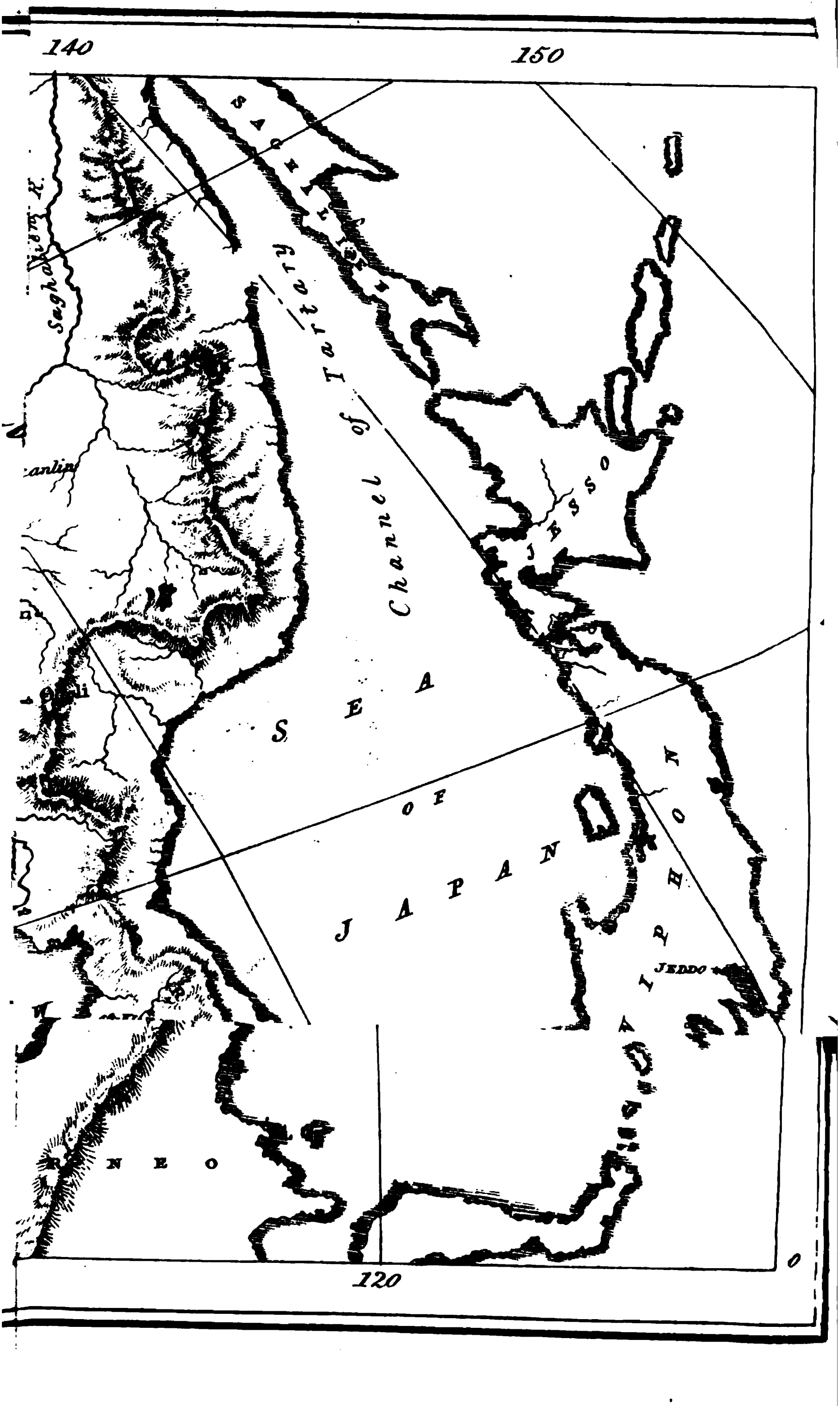
To G. G. *The review is well, but rather too severely written. We cannot insert it he states his name, and gives us an opportunity of judging for ourselves of the justic critical tartness. He must let us have the work for a day or two: we cannot procure it sending to Germany.*

"An Apothecary" *reproaches us for not giving "every account of all medical societies." recommend him to attend them more frequently, and we are quite sure he will approve judgment in only giving occasional reports of their meetings. True it is that "many men attend these conversations;" but it is also true that their "learning" is not always ap in the discussions that take place at medical societies, for they are too often "dull to do yawning."*

We decline answering the question of "Medicus:" *he appears morbidly sensitive. An to our notice of his work that he chooses to forward to us, shall be inserted: we, of reserve to ourselves the liberty of putting in a rejoinder, if we deem it necessary.*

Mr. Ballard's *communications have been received. It is always gratifying to us to our exertions are appreciated by our readers. We shall be happy to receive further re Cases, &c. from* Mr. B.

Dr. Christie's *valuable and elaborate* Essay on Cholera *has been received; a part of be published in our next number.*


140
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Saghalien R.
Channel of Tartary
SEA OF JAPAN
JESSO
NIPHON
JEDDO

THE LONDON

Medical and Physical Journal.

410, VOL. LXIX.] APRIL 1833. [82, *New Series.*

"For many fortunate discoveries in medicine, and for the detection of numerous errors, the world is indebted to the rapid circulation of Monthly Journals; and there never existed any work to which the Faculty in Europe and America, were under deeper obligations than to the 'Medical and Physical Journal of London,' now forming a long but an invaluable series."—RUSH.

ORIGINAL PAPERS.

THE EPIDEMIC CHOLERA.

A Treatise on the Epidemic Cholera; containing its History, Symptoms, Autopsy, Etiology, Causes, and Treatment. By ALEXANDER TURNBULL CHRISTIE, M.D., of the Honourable East-India Company's Service; Member of the Royal Asiatic Society of Great Britain and Ireland, of the Wernerian and Royal Medical Societies of Edinburgh, &c.

(*With a Map of the Countries visited by the Epidemic Cholera.*)

THE observations on the Cholera published by the author in 1828 form the basis of the present essay. They have been already honoured with the approbation of many distinguished physicians and journalists, both in this country and on the continent, and also by certain members of the Institute of France, at a public meeting of that learned body in November 1830. He therefore trusts that it will not be considered presumptuous in venturing to offer the present more extensive remarks for the consideration of his professional brethren. Many parts of his former essay have been completely recomposed, and very much extended; the objections offered to some parts of it have been fairly met and discussed, and advantage has been taken of all the new facts which have been subsequently published, and of the observations of some intelligent friends. His general views have been thus strongly confirmed, while a few of the less important have been slightly modified. But in addition to the contents of the treatise alluded to, the present contains so much additional matter that it must be considered as entirely new. The history of the disease, the chapters on its symptoms and on its causes are new, and large additions have been made to those on its etiology and treatment. No essential change has been made in his theory of the disease, and he is proud to say that new facts, which from time to time have become known, have only tended to develope and confirm it.

He need not repeat what he said in the preface to his former work respecting the extensive advantages he enjoyed during a five years' residence in India for studying the disease in all its forms; for he hopes that the following pages will be found to contain sufficient evidence of them. At the same time, he wishes it to be distinctly understood that he has not confined himself exclusively to his own experience, but has sought for information in the many valuable works which have been already published by his medical brethren in India, and he is inclined to believe that he has thus been enabled to arrive at more correct views respecting the nature of the disease than could possibly have resulted from the experience, however extensive, of one individual. Although it is the very same disease which broke out in the Gangetic Delta and other parts of Bengal in 1817, which continues in India to the present day, and has spread over the greatest part of the old world, yet there can be no doubt that it has presented a variety of features at different times and places. It is therefore evident that a partial acquaintance with it would be likely to convey very erroneous notions respecting its true general character; and it will probably be found that the inaccuracies of some authors have arisen entirely from their having limited their views too exclusively to the cases which came immediately under their own observation. But in expressing himself thus, he means no disparagement to the abilities and accuracy of any of his predecessors; and it is only his good fortune to have come a little later, and thus to have it in his power to benefit by their observations, and to take a more extensive view of the disease than it was for them to command. Were a being from a distant planet to visit our globe, and confine his observations to one of the islands of the Pacific, he would certainly go away with very incorrect notions of the characters of our species; and the same would be the case were he only to pass a short time in any other single spot, and the farther he extended his journey into different regions of our little world, the more and more would he become acquainted with the nature of its inhabitants, and the errors which he at first imbibed would gradually be dissipated. So it is with every other inquiry: we have more correct notions of cholera now than prevailed upon its first appearance; and should it continue longer in Europe, more extensive experience may remove the errors which still cling to us.

In addition to his own experience, he is indebted for much valuable information on the symptoms, autopsy, and treatment of the disease to the Reports published by order of government, under the superintendence of the Medical Boards of Calcutta, Madras, and Bombay, and to the writings of Messrs. Annesley and Orton. Numerous works have been consulted upon the history of the disease, among which may be enumerated the Asiatic Journal, the Calcutta newspapers, the Reports already mentioned, Colonel Tod's Annals of Rajasthan, and Messrs. Baillie Fraser's travels through Persia, the Courier de St. Petersburg,* &c. He feels himself under a particular obligation to M. Alexandre Tourgeneff, by whose unwearied exertions much valuable information has been collected concerning the history of the epidemic, and its existence in Europe previous to its recent introduction from India, and which he has, in the handsomest manner, communicated without reserve.

He must add a few words respecting the map attached to this essay; for, from its necessarily imperfect state, it might, if unaccompanied by some explanation, be calculated to convey an incorrect idea in regard to the progress of the disease. Upon casting the eye over it, it may appear that the disease has generally followed the course of great rivers, or of frequented lines of communication between different countries; but this is more in appearance than reality, and is owing to various causes.

1st. In all countries the cities and large towns are situated on rivers or on great roads; and they naturally engross our attention, while the villages in the intermediate spaces are neglected; and it would not be possible, even if we had the necessary information, to insert the dates at which the disease had appeared at the small towns and villages, and thus to fill up our map.

2d. In Persia, Arabia, and Syria, we have been able to indicate the dates at which the disease first appeared, only at a few of the principal places, although it is notorious that it spread over the whole of Persia, and we may presume also over a great part of the other two countries just mentioned. Now, as the principal towns of these countries are situated on the great lines of communication between central Asia and Europe, it has been supposed by some that the disease had been carried along these roads by contagion. It would be hardly possible to represent, with perfect accuracy and in detail, its exact progress through a country, its quick passage from place to place, and its sudden appearance and disappearance; but it may be figured to the imagination as a winged restless fiend, hovering over a country, and alighting occasionally, and in a capricious mood, to contaminate with his hateful presence the air immediately around.

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* The author has been indebted for a perusal of this journal to the politeness of M. Smirnove.

Not to extend the map to an inconvenient size, it has been necessary to make the equator its southern limit, and all the places to the south of that line, which have been visited by the epidemic, have therefore been unavoidably excluded.

History of Cholera.

The dreadful scourge under which India and other eastern countries have been suffering for some years, and which is now extending its fatal influence into Europe, is not a new disease. It could reckon numerous victims in India, long before its fearful visitation which commenced in the year 1817, and it appears to have existed there from remote antiquity; it is said to be mentioned in the medical writings of the Hindoos, which date several hundred years before Christ, and certain forms of it were known to the Greek and Roman physicians.

Hindoostan and the neighbouring countries have always been the principal theatres of its awful ravages: they have never been without sporadic cases, have had it for years in some places as an endemic, and have been occasionally desolated by its having spread far and wide under an epidemic form.

The first well-authenticated account of its occurrence in the East is that of the Dutch physician, BONTIUS, who wrote in 1629, at Batavia. He describes the symptoms accurately, and refers the cause of the disease to a hot and moist disposition of the air, and to an intemperate indulgence in fruit.

We learn from the works of Colonel TOD, that it raged in Rajpootana and other parts of India, at different times, during the seventeenth century. Its first appearance is mentioned in the following passage from his annals of Mewar, where, after having described the magnificent bund or embankment of white marble, which confines the waters of the lake of Rajsmund, and which is the admiration of all travellers, he continues, "one million and one hundred and fifty thousand pounds sterling, contributed by the rana, his chiefs, and opulent subjects, were expended on this work, of which the material was from the adjacent quarries. But, magnificent, costly, and useful as it is, it derives its chief beauty from the benevolent motive to which it owes its birth: to alleviate the miseries of a starving population, and make their employment conducive to national benefit, during one of those awful visitations of providence, famine and pestilence, with which these states are sometimes afflicted."

It was in 1661, only seven years after the accession of Raj Sing, that these combined evils reached Mewar, less subject to them, owing to its natural advantages, than any other state in India. "From all I could learn," he adds in a note, "it was the identical pestilence which has been ravaging India for the last ten years, erroneously called Cholera Morbus."

In the year 1737, or A. D. 1681, when the Rajpoots of Marwar were defending their independence against Aurungzeba, the Rajpoot chronicler thus concludes the events of that year, and incidentally introduces the existence of thi spestilence. "Thus the *saca* (destruction) of Sojut was when 37 ended and 38 commenced, when the sword and the *murrie* united to clear the land." "Murrie," says Colonel Tod, "is the name for that awful scourge, the cholera morbus, which has been raging, to the loss of so many lives, for the last thirteen years, throughout India. It appears to have visited India often, of which we have given a frightful record in the annals of Mewar, in the reign of Rana Raj Sing, (see vol. i. p. 390,) in 1717, A. D. 1661, twenty years previous to this; and Orme describes it as raging in the Deckan in A. D. 1684; no doubt a continuance of the same scourge."*

Mr. Scot says,† that there is an account, in the records of the Madras Medical Board, of the disease having occurred as an endemic, in various parts of the Madras territories, in the years 1769, 1770, 1781, and 1783; and that it also occurred, in the latter year, as an epidemic all along the Coromandel coast. It was about this time that Sonnerat travelled in India, (viz. between 1774 and 1781,) and he accordingly gives an accurate description of the disease, which he denominated flux. He says, that it twice prevailed as an epidemic; that, during the first time, above 60,000 people, between Cherigam and Pondicherry, perished; and that its second visit was still more dreadful. He attributes its causes to sleeping in the open air, to eating cold rice and curds, (which is a common article of food in that country,) and to eating after cold bathing.

It is mentioned, on the authority of a committee of medical officers, who assembled, in 1819, in the Mauritias, to examine into the nature of the epidemic which then raged there, that a similar disease had occurred in that island in the year 1775.‡

In 1781, the cholera prevailed in the northern circars, and assailed, with inconceivable fury, a detachment of 5000 men, who were then marching through that part of the country, under the command of Colonel Pearse. As usually happens on such occasions, it first attacked the camp followers, then the sepoys, and lastly the Europeans. But few officers were affected, and of these only one died. "The troops had been marching almost incessantly for six days, through sand and salt water, and were at length so enfeebled as scarcely to be able to move. A violent wind blew day and night along the whole shore, and, although it was not quite so strong at night, it was then accompanied with such a penetrating moisture as to wet through the thickest woollen clothes. The troops were, besides, in no condition to withstand the inclemency of the season: they had no tents, and few possessed even a blanket to shelter them on getting to their ground; they generally marched in the night; and many suffered by incautiously lying down while warm from exercise, and falling asleep, exposed to the influence of a damp and noxious atmosphere."*

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* Colonel Tod's MSS.

† Preface to the Madras Report on the Epidemic Cholera.

‡ Ibid.

About this period the disease spread to Calcutta, where it principally attacked the native inhabitants; and it appeared in the northern circars a second time, in 1790.

From 1781 up to 1790, it had occurred every year, and sometimes with great violence, in various parts of the Madras territories; and tolerably accurate descriptions of it, by Drs. Duffin and Davis, are to be found in the records of the Madras Medical Board. But it is to be regretted that, at this time, no post-mortem examinations were made of the fatal cases, except in two or three instances; and in these the morbid appearances are but imperfectly described.

We have no account of the cholera having occurred as an epidemic, in the Bengal provinces, before 1817; but sporadic and endemic cases had not been unfrequent. Mr. Jamieson mentions a remarkable instance of its occurrence at Hurdwar, in 1783, when an immense crowd of pilgrims, amounting, it is believed, to one or two millions, were assembled there for the purpose of ablution in the holy stream of the Ganges. The temperament at this place is very variable. The days are hot and the nights cold, with very heavy dews and chilling blasts, and the devotees were exposed to all the inclemencies of the weather. The disease broke out soon after the commencement of the ceremonies, and in less than eight days is said to have cut off more than 20,000 victims: but so confined was its influence, that it did not reach the village of Juwalapore, only seven miles distant, and it ceased immediately upon the concourse breaking up, on the last day of the festival."*

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* Bengal Report.

In the year 1817, it broke out almost simultaneously in various parts of Bengal; and this was the first time it had visited that country as an epidemic. It occurred in an unusual degree at Buddea, and other southern districts, in May and June. But it was in August that it first began to excite universal alarm by its wide spread, and the rapidity of its progress. In that month it made dreadful havoc in Jessore, a populous town situated in the centre of the Gangetic Delta, about a hundred miles north-east of Calcutta, where it was reported to have cut off, within the space of a few weeks, more than 6000 of the inhabitants. At Calcutta, "several cases of cholera occurred amongst Europeans on the 5th of September, and from that day forward the disease became daily more frequent." It commenced about the same time in numerous other parts of Bengal, and soon after the middle of September, being now strictly epidemical, it extended in all directions; "within the space of a few weeks stretching from the easterly parts of Poorneah, Dinagepoor, and Sylhet, to the extreme borders of Balasore and Cuttack, and reaching from the mouths of the Ganges nearly as high as its junction with the Jumna."

"These facts," says Mr. Jamieson, "are more than sufficient to show the fallacy of every theory which attempts to derive the disease from any local source, or to trace it to any one particular spot, as the centre from which it was emitted to the surrounding countries. They prove, without the possibility of dispute, that it broke out at very remote places at one and the same time, or at the distance of such short intervals as to establish the impossibility of the pestilential virus being, in this stage of the progress, propagated by contagion, or any of the other known modes of successive production; and that its general diffusion was therefore referrible to some cause of more universal operation.

At this period, within an area of several thousand miles, scarcely a town or village escaped; and so great was the mortality throughout the Delta of the Ganges, that the bulk of the whole population was sensibly diminished. "It is remarkable, that the large and populous city of Moorshedabad, from extent and local position, apparently very favourably circumstanced for the attacks of the epidemic, should have escaped with comparatively little loss, whilst all around was so severely scourged.

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* Bengal Report, preface, p. x.

The only spots on the eastern side of the Ganges, beyond the precincts of Bengal, invaded by the epidemic, in 1817, were Moozufferpore and Chupruh, the principal stations of the Tirhoot and Sarun districts, and the cantonment of Gazeepore; and in each of these places its attacks were confined to the towns themselves, or the villages in their immediate vicinity; the great bulk of the adjoining country, at this period, having entirely escaped.

It now began to exhibit one of its most striking peculiarities: instead of bursting forth irregularly over the country, as it had hitherto done, it began to run forward in certain paths, and to confine itself within certain boundaries, which could be defined with perfect accuracy.

In the first week of November, "it reached the centre division of the grand army, then encamped, under the personal command of the Marquis of Hastings, near the banks of the Sinde, in Bundelkund."

"It was here that the disease put forth all its strength, and assumed its most deadly and appalling form. It is uncertain whether it made its first approaches on the 6th, the 7th, or the 8th of the month. After creeping about, however, in its wonted insidious manner, for several days, among the lower classes of the camp followers, it, as it were, in an instant gained fresh vigour, and at once burst forth with irresistible violence in every direction. Unsubjected to the laws of contact and proximity of situation, which had been observed to mark and retard the course of other pestilences, it surpassed the plague in the width of its range, and outstripped the most fatal diseases hitherto known, in the destructive rapidity of its progress. Previously to the 14th, it had overspread every part of the camp, sparing neither sex nor age in the undistinguishing virulence of its attacks: the old and the young, the European and the native, fighting men and camp followers, were alike subject to its visits, and all equally sunk in a few hours under its most powerful grasp. From the 14th to the 20th or 22d, the mortality had become so general as to depress the stoutest spirits: the sick were already so numerous, and still pouring in so quickly from every quarter, that the medical men were no longer able to administer to their necessities. The whole camp then put on the appearance of an hospital: the noise and bustle almost inseparable from the intercourse of large bodies of people had nearly subsided; nothing was to be seen but individuals anxiously hurrying from one division of the camp to another, to inquire after the fate of their dead or dying companions, and melancholy groups of natives bearing biers of their departed relatives to the river. At length even this consolation was denied them; for the mortality latterly became so great that there was neither time nor hands to carry off the bodies, which were then thrown into the neighbouring ravines, or hastily committed to the earth, on the spots on which they had expired, and even round the walls of the officers' tents. All business had given way to solicitude for the suffering. Not a smile could be discerned, nor a sound heard, except the groans of the dying and the wailing over the dead. Throughout the night, especially, a gloomy silence, interrupted only by the well-known dreadful sounds of poor wretches labouring under the distinguishing symptoms of the disease, universally prevailed. The natives, thinking that their only safety lay in flight, had now began to desert in great numbers; and the highways and fields, for many miles round, were strewed with the bodies of those who had left the camp with the disease upon them, and speedily sunk under its exhausting effects. It was clear that such a frightful state of things could not last long; and that, unless some immediate check were given to the disorder, it must soon depopulate the camp: it was therefore wisely determined, by the commander-in-chief, to move in search of a healthier soil and of purer air. The division accordingly, on the 13th, marched in a south-easterly direction, towards Zalgoug and Lileia, and, after several intermediate halts, on the 19th crossed the clear stream of the Betwah, and, upon its high and dry banks at Erich, soon got rid of the pestilence, and met with returning health. But its line of march, during the whole of this progressive movement, exhibited a most deplorable spectacle, although every means had been taken, by giving up the ammunition carts, and collecting elephants and draught cattle to procure sufficient carriage, the sick were found too numerous to be moved, and were, in part, necessarily left behind; and as many who left the carts, pressed by the sudden calls of the disease, were unable to rise again, and hundreds dropt down during every subsequent day's advance, and covered the roads with dead and dying, the ground of encampment and line of march presented the appearance of a field of battle, and of the track of an army retreating under every circumstance of discomfiture and distress. The exact amount of mortality during these few calamitous days could not, from the circumstances of confusion and general disorder under which it took place, be ascertained with any degree of accuracy: from the military returns, however, it appears that, in this fatal week, of 11,500 fighting men of all descriptions, 764 fell victims to the disorder; and of the camp-followers, it was conjectured that about 8000, or one tenth of the whole, was cut off."

In the year 1818, the epidemic, still avoiding the eastern and northern parts of the country, took a south-westerly direction, and, after following the course of the principal rivers and great roads, to almost every village and town of Bundelkund and Sangor, was successively communicated to the districts of Malivah, Berar, and Kandeish, and thus extended into the presidencies of Madras and Bombay. Kotah and Jeypoor were, at this period, the most westerly places it attained; where, having encountered a high and mountainous tract, which has generally been found to be inimical to its existence, it gradually subsided, and did not penetrate across the hills, either to Ondeypoor or Ajmeer, until the year following.

The inhabitants of Ondeypoor congratulated themselves upon having so long been exempt from the epidemic, and vainly hoped that their eastern mountains would continue to oppose a sufficient barrier against its introduction; but, in July 1819, they were one day astonished and dismayed at the intelligence of their prince having been attacked in the centre of his palace, and, in a few hours afterwards, that his prime minister had fallen a victim to this cruel disease. Lieutenant-Colonel Tod, late resident at Ondeypoor, waited upon the prince during his illness, and was accompanied for a time by the minister. The prince recovered in the course of twelve or fifteen hours, in consequence, it would appear, of the exhibition of large quantities of onion juice; a favorite Hindoo remedy in this complaint. Inquiry was then made for the minister, who had not appeared for some hours, when the melancholy intelligence was brought of his having been already carried off by the dreadful distemper from which his master had so happily escaped. It now, for the first time, made its appearance in the city, and committed sad ravages among the inhabitants.

A curious fact is recorded in regard to its course from Hoshingabad, on the river Nerbudda, to Nagpore. Many of the intermediate places were severely scourged by it, and a small town, named Mooltay, which is about half way, lost five hundred of its inhabitants; but, so very capricious was it in its visitations, that all the places between Mooltay and Negpore, and, among the rest, the large town of Baitool, were entirely exempt.

We will now trace the disease from Allahabad, at the junction of the Ganges and Jumna, to the northern provinces. It first appeared in Allahabad in March, and prevailed for several months with great malignancy, having swept off nearly 10,000 inhabitants. "The troops stationed in the port and city were not affected until the middle of July following, although holding daily and unrestrained intercourse with the townspeople." Keeping close to the banks of the Ganges, it entered Cawnpore on the 8th of April, attacked the city and neighbourhood of Beethoor; and, although it spared Bareilly, Mooradabad, and almost every other town on the same line, it broke out in Shajehanpoor in July, and is reported to have killed upwards of 5000 of the inhabitants.

It extended up the Jumna in the same way, desolating some places, while it spared others. It is remarkable that Agra was not invaded by it till the 1st of July, while Mutra, situated much higher up the river, received it so early as the beginning of June. The former is a dry, airy town, and suffered comparatively little; the latter a filthy crowded city, and had the disease in all its virulence. It commenced in Delhi on the 20th July, and continued nearly a month, making great havoc among the dense population of that large capital. It raged in the city of Meerut in July and August, and in Saharanpore in September and October; but all the intermediate places escaped. Beyond this, the epidemic could not be traced; the mountains to the north appearing to have put a stop to its further progress. But although such has been generally observed to be the case, it has not been without exceptions, for "in June 1818 it passed the lofty range of mountains guarding Nepaul to the east, and visited Rhatmandoo, Patun, and Bhatgoon in the subjacent valley; and, in October following, it got from Sylhet to the independent countries of Kashar and Munnipoor, on the eastern borders of Bengal: but, even here, it might be seen that the highlands were not congenial to it, for it had been raging with very great violence in the adjoining district of Sylhet, before it was enabled to overcome the obstacles opposed to its progress by the intervening mountains."*

The following extract from a letter of the Medical Board of Bengal to that of Bombay, illustrates in a striking manner how very irregular and capricious, in its visitations, the epidemic had been at this period, in the Bengal provinces. "The disease would sometimes take a complete circle round a village, and, leaving it untouched, pass on, as if it were about wholly to depart from the district. Then, after a lapse of some weeks, or even months, it would suddenly return, and scarcely reappearing in the parts which had already undergone its ravages, would nearly depopulate the spot that had so lately congratulated itself on its escape. Sometimes, after running a long course on one side of the Ganges, it would, as if arrested by some unknown agent, at once stop; and, taking a rapid sweep across the river, lay all waste on the opposite bank. It rarely, however, failed to return to the tract which it had previously left. After leaving a district or town, it sometimes revisited it; but, in such cases, the second attacks were milder, and more readily subdued by medicine, than those in the primary visitation."*

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* Although it has passed over many ranges of hills, I know of no instance of its having appeared at great altitudes: the Neilgerry hills, in southern India, which rise to between eight and nine thousand feet above the level of the sea, have hitherto been free from it.

Having thus given a rapid sketch of the progress of the epidemic in the years 1817 and 1818, through the provinces of Bengal, I will now trace it through the presidencies of Madras and Bombay, to the southern extremity of India; and, in doing this, it will be convenient first to follow its course along the eastern, or Coromandel coast, and afterwards through the central and western parts of the peninsula. It extended from Bengal into the Gaujam district in March 1818; from thence it gradually crept along the coast, visiting almost every town and village on its way, and reached Madras in October. It raged there from the 5th to the 24th of that month, when it received a temporary check from a violent storm which occurred on that day. It recommenced, however, but again began to decline in the beginning of November, and gradually disappeared. It had been principally confined to the lower classes. Still continuing its course to the south, it reached Cuddalore on the 14th November, Combaconum on the 20th, and Vegapatam on the 22d of the same month; it appeared at Madura on the 30th November, and it had arrived at Palamcottah, near the southern point of India, on the 1st January, 1819.

Let us now follow it through the central parts of the country. It was communicated to Nagpore, in the way we have already described, in May 1818; it appeared at Jaulnah on the 3d of July, and in the same month spread from thence N. W. to two detachments of troops in Kandeish, one of them stationed at Mulligaum, the other at Mussurabad.

It made its appearance at Punderpore on the 14th July, where crowds of strangers were congregated for the celebration of a festival, and, as usual under such circumstances, it committed great havoc. Still proceeding southward, it attacked the troops in the southern Mahratea country, and appeared in the towns of Badamee and Darwar in August. It manifested itself at Bellary on the 8th September, at Hurryheir and Chittledroog about the middle of the same month, and at the large military station of Bangalore in the end of October. This place is situated on a high table land, having an elevation of about 3000 feet above the level of the sea; it consequently enjoys a pleasant temperature, is remarkable for its general salubrity, and never suffered much from the epidemic. In the towns of Mysore and Seringapatam, on the contrary, which are situated in a low unhealthy district, the mortality was very great, the disease having appeared there in the beginning of September. From thence it was communicated to the districts of Wynand and Coimbatore, in October and November.

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* Bombay Report.

From Joulnah we find that the disease had sent forth another stream, which, proceeding through Hydrabad* where it arrived in the end of July, from thence to Kernal and Gooty, where it appeared on the 6th of October, it thus continued onwards, by way of Cuddapah, into the Carnatic.

Besides the towns in this part of India, already mentioned as having been visited by the disease, many others (and indeed scarcely a town escaped) were attacked by it, in the months of October and November of this year; but in no instance could it be referred to infection or contagion, many places having been attacked simultaneously, and some of the more remote places first.

We must now turn our attention to the western side of the peninsula. After having spread from Joulnah, in the beginning of July 1818, to Aurungabad and Amednuggur, the epidemic reached Seroor on the 18th or 19th, and, in the end of the same month, appeared in the city of Poonah. "On the 6th August it broke out at Panwell, a considerable village on the main line of communication between Poonah and Bombay, separated from the latter by an arm of the sea, and distant about fifteen or twenty miles; but between which a pretty constant communication is kept up by means of boats."*

On the 9th or 10th of the same month, the first case appeared on the island of Bombay. It was supposed by Dr. Taylor, of the Bombay service, to have been introduced by a man from Panwell, where he had caught the disease; but of this there is not sufficient evidence, and we must, therefore, suppose that the epidemic influence spread to this place in the same way it had done over other parts of India. From hence it extended along the coast to the north, and showed itself in Surat in the end of August; but of its farther progress in this direction, no distinct account has been published.

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* Bombay Report.

The dates of its appearance at the different towns in the Malabar coast show that it could not have been communicated from one to another; for it appeared almost simultaneously in distant places, and in some of the more southerly, at a much earlier period than in those farther to the north. Thus, it broke out in Mangalore on the 1st of September, at Cannanore on the 5th December, at Tellicherry (which is a little farther south) on the 25th November, at Calicut (still farther to the south) on the 16th of October, at Cochin on the 8th December, at Allepy and Quilon in October, and at Trivandrum in January 1819, whence it spread as far south as Cape Comorin.

Before leaving this part of the history of the epidemic, it will be necessary to add a few general remarks, in order to supply the want of more minute details, which have been unavoidably omitted in this short sketch. The disease occurred at all seasons, and in all kinds of weather; but changeable damp weather was generally observed to be favorable to its production, and its progress was sometimes checked by the occurrence of a thunder storm, or by the return of a steady temperature and dry air. Some places were observed to be much more obnoxious to its attacks than others, and high and dry situations were, every where, more exempt than low damp and insalubrious places. Ever since the first appearance of the epidemic, certain districts have been so subject to it, that few detachments of troops have passed through them without suffering. This is particularly the case with some parts of the ceded districts, of which the burial ground of Gooty bears many a sad proof; for there repose the ashes of Sir Thomas Munro, and of many other British officers who fell sacrifices to this dire scourge. The same is said of the Surat district, on the Bombay side of India.

The disease varied much in its duration and malignancy in different places. In some it raged with great fury for a few weeks or only for a few days, and suddenly disappeared; in others it continued with little or no intermission, but in a milder form, for several months; but in general it was observed to continue only for a short time, gradually increasing in intensity, to decline slowly, and to disappear within fifteen or twenty days; and few visitations continued longer than a month in one place. It sometimes returned within a very short period after it had completely subsided, or hovered about a spot, as it were, slightly changing its position, or transferring itself from one description of persons to another. The inhabitants of Gooty, for instance, suffered severely from it in 1827, while the regiment which was stationed there, and furnished guards to different parts in the town, enjoyed perfect health. On a sudden, however, the case was reversed, the townspeople were relieved from the disease, and the soldiers were attacked.

It spared neither age sex nor rank, but it was generally observed that the debilitated, and those exposed to fatigue and to the inclemencies of the weather, were most subject to it. Mr. Scot says, "all accounts agree in stating that the young, the healthy, and the robust are the least liable to cholera. The observations of a great proportion of our medical officers being confined to their practice in military hospitals, we have not sufficient data to determine whether there be any peculiar liability to cholera in one sex more than in another; but, if the preceding remark be well founded, it might be inferred that the grèater delicacy of females, and perhaps their greater tendency to nervous disorders, would give rise to a greater predisposition to it in them than in males.* Children are subject to cholera, but it has been observed, particularly in Mr. England's reports, that infants, who have been confined exclusively to the breast, are not susceptible of the disease. This remark, however, is to be received with reserve; as the paucity of that class of subjects, in comparison with any other, must obviously diminish the facility of forming a just conclusion." One attack gave an individual no security against a second, but appeared rather to make him more liable to it. We have no data by which we can ascertain the number of victims swept off during the first years of the epidemic in India.

In regard to the mortality of the disease in Bengal, Mr. Jameson, from extensive inquiries, comes to the following conclusions. "1st. That the sum total of the mortality occasioned by the epidemic fell far short of the rate assigned to it by the voice of the public, during the season of alarm. 2d. That the mortality was proportionately much greater among large and dense, than among small and dispersed, bodies of men. 3d. That, in a given place, it was generally greater in the commencement and middle, than towards the termination of the disorder. 4th. That, when unlimited by the intervention of remedial means, it generally amounted to one half, and sometimes to two thirds of the seizures.* 5th. That, when medical aid was daily exhibited, it rarely amounted to one third, and was generally as low as one fifth of the attacked. 6th. That men were generally more susceptible than women, and that infants and children were nearly exempt."

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* We shall find afterwards, that in Russia this was not the case, but, on the contrary, that men were more subject to the disease than women.

The following table and remarks, from the Report published under the superintendence of the Madras Medical Board, by Mr. Scot, show that in the Madras army the number of fatal cases, among Europeans, amounted to about nineteen per cent. of those attacked, among the natives of India to about twenty-three and a half per cent.

"Epidemic cholera having now existed in these territories for about five years, and, as the preceding narrative evinces, having proved a formidable scourge to all conditions of people, it will be satisfactory here to exhibit that the extent of its ravages in the army falls short of what might be apprehended from a cursory perusal of its history. The following tabular view is taken from the returns in the appendix, and it will not pass unobserved', that, prior to the appearance of the epidemic, cases of cholera were progressively becoming more frequent.

Tabular View of the number of Cases of Cholera occurring in the Army of Fort St. George, from 1815 *to* 1822.

	EUROPEANS.		NATIVES.		STRENGTH.	
Years.	Admitted.	Dead.	Admitted.	Dead.	Europeans.	Natives.
1815	65	0	87	0	13,409	59,672
1816	97	0	92	0	13,943	61,969
1817	168	0	114	0	12,959	61,641
1818	1087	232	3,314	664	10,652	58,764
1819	564	85	3,779	734	10,125	63,782
1820	356	69	3,322	758	9,416	76,870
1821	357	39	2,527	830	9,553	82,046
1822	774	170	548	199	10,813	74,707
From 1818 to 1822,	3,138	595	13,490	3,185		
Add . .	526	100	2,340	550, not in the regular returns.		
Total .	3,664	695	15,830	3,735		

The General Returns for 1815 to 1817, do not exhibit the diseases from which casualties arose, and it is not known, accordingly, whether any, or how many, of the cases of cholera, during these years, terminated in death: but in the course of the first four months of 1818, when seventeen cases of cholera took place amongst Europeans, no death ensued;

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* I am rather inclined to think that this is somewhat underrated, for the disease has been certainly more fatal than this in the south of India, and also in other countries, when left to take its course.

in May, fourteen cases occurred, and nine died. Amongst the natives, during January and February, ten cases took place, without a casualty: in March, twelve cases and two deaths; in April, thirty-seven cases and thirteen deaths; in May, seventy-two cases and twenty-four deaths. We may, therefore, conclude, that the epidemic cholera furnished the first casualties amongst Europeans in May, and amongst the natives in March 1818; and that, prior to that period, the casualties from cholera, commonly called cholera morbus, did not exceed the usual proportions.

"From 1818 to 1822 inclusive, the medical returns show 3138 cases of cholera in Europeans, of which, 595 terminated fatally, being in proportion of about nineteen per centum; and 13,499 cases in natives, of which, 3185 terminated fatally, being about twenty-three and a half per centum. As, however, the medical returns of small detachments of Europeans are not always included in the general returns, and as there are no returns at all from some of these detachments, 526 cases, and their proportional one hundred casualties, are allowed, to meet the aggregate of such incidents, which then gives 3664 cases, and 695 deaths. The medical returns of various native troops being missing for certain months, recourse was had to the regimental records, from which it appears, that very nearly 550 men have died of cholera without appearing in the tables in the appendix; which number, at twenty-three and a half per centum, gives 2340 cases: with these additions, the total number of cases in the natives of the army may be stated at 15,830, and the casualties at 3,735. This loss will probably fall much within the calculations of those who have been accustomed to hear of the ravages committed by the disease.

"Great as the proportionate mortality which has just been stated may appear to be, it is nevertheless probably far within the truth. When the disease first appeared, there were many causes tending to magnify the number of attacks, and the number of cures; and a most erroneous estimate was too generally formed of the relations in which these events actually stood to each other; the regimental practitioner was accordingly astonished and dismayed at finding, when the disease attacked his corps, and each case was authenticated under his own observation, that the proportion of deaths was most widely different, and greatly exceeded his calculations.

"It is probable that, since cholera has been prevalent, many cases have been ranked under that head in the returns, which at other times, and under a more careful diagnosis, would have found their places in other columns. The

'Cholera Morbus,' too, has been necessarily blended in the tables with the 'Epidemic Cholera;' for, notwithstanding every precaution, it was found that these forms of disease could not be accurately distinguished in most of the returns: whether, under this uncertainty, that form of the disease has increased in latter years in the ratio of increase exhibited in 1816 and 1817, or not, it is difficult to judge; but there have at least occurred, on several occasions, a kind of cholera, very frequent in its attacks, and in all respects answering the definition of Cullen.

"To ascertain, therefore, the true proportional mortality of the prevailing epidemic cholera, recourse may be had to those formidable visitations in particular corps, which form part of the subject of the preceding narrative, and the result of this inquiry gives 767 cases, and 211 deaths, amongst the European troops; and 4065 cases, with 1544 deaths, amongst the natives.* We have thus the proportion of twenty-seven and a half per centum in the former, and nearly thirty-eight in the latter, which, considering that this disease runs its fatal course very generally within twelve hours, sufficiently marks it as one of the most formidable that has ever afflicted the human race."

Fort St. George; 31st December, 1822.

The epidemic has continued to hover about India up to the present time, but it would swell this work to too great a size to attempt more than a faint history of its first visitations in the numerous countries it has passed over; and we must therefore leave India, to examine how it penetrated to the south and east, into all the islands of the Indian seas, and into China; and how it spread to the west, over Persia, Arabia, Syria, and Russia.

It appeared in the small island of Penang, or Prince of Wales's island, about the 23d October, 1819, and carried off 800 persons in the course of a few months; it visited Queda, on the opposite coast, and Malacca in the month following; and reached Acheen, on the coast of Sumatra, in the end of December. It continued to prevail in many of these islands during the year 1820; and, in the autumn, the government of Manilla, conceiving it to be contagious, ordered "that all ships reaching Manilla from Penang, Malacca, Singapore, and Batavia, should perform quarantine for forty days outside the harbour." But, in spite of this precaution, it broke out there between the 1st and 3d of October, immediately after a most violent and destructive storm, and continued to rage in the island with great fury for some months. About the middle of this year, it committed great ravages in Siam; and, towards the end of it, it broke out in Canton, Whampoa, and Macao, where the alarm produced by it among the Chinese merchants was so great as to occasion a serious interruption to commerce. In the spring of 1821 it visited Batavia and other towns in the island of Java, and about the end of this year it spread into the countries of Cochin China and Jung King. It has reappeared in many of these countries, since the period under consideration, and probably few places in the Indian Archipelago have entirely escaped; but our scanty information from these distant regions will not enable us to enter more fully into this part of the history of the epidemic.

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* This is evidently a most incorrect method of estimating the general mortality of the epidemic; for it is, in fact, only selecting the worst description of cases; and I would not even reject the cases of cholera morbus, in calculating the proportionate mortality, since it is notorious that this disease was generally a precursor of the other, and degenerated into it, if not checked by medicine. I believe, therefore, that the preceding table may be considered as exhibiting an accurate statement of the mortality from the epidemic in the army of Madras.

(To be continued.)

SWELLING OF THE EXTREMITIES AFTER DELIVERY.

Abstract of a Paper read before the Hunterian Society, by William Coulson, Esq., Surgeon to the General Dispensary, and Consulting Surgeon to the London Lying-in Hospital.

Case I. *Swelling of the Right Leg and Left Arm after Parturition; Death.*

Sarah Reynolds, aged twenty years, of a delicate habit and fair complexion, was seized, on Thursday, the 22d of October, (fourteen days after delivery,) with headach and numbness of the right ankle. On the following day (the 23d), she was greatly distressed *with pain and swelling of the right leg and left arm;* there was a blush of redness at the ankle and at the wrist; pulse small, quick, and fluttering, (144 in a minute;) skin hot and dry; tongue parched, and rather brown; alvine and urinary secretions natural; continued to suckle her infant; lochia not suppressed.

On the 24th, the symptoms continued nearly the same; but, on the 25th, she began to sink, and expired early in the morning of the 26th.

The body was examined thirty hours after death. The spermatic veins of both sides were carefully traced, and found quite healthy; the veins of the pelvis, with the exception of the right external iliac, were also in a natural state: this vein was a little thicker and more vascular than natural, and contained some coagulable lymph. The uterus was not diseased, nor indeed could any disease be ascertained in the abdomen. The femoral vein was quite healthy. There was a considerable effusion of sero-purulent matter beneath the skin covering the right ankle-joint, and a small quantity beneath the integuments covering the wrist. Permission could not be obtained to examine the other parts of the body.

CASE II. *Swelling of the Upper Extremities after Delivery; Death.*

Sarah Milne, aged eighteen, was seized, at six P.M., December 26th, with shiverings; these were followed by aching pains over the whole body, particularly in the joints; great heat and dryness of the skin, and also occasional delirium. The pulse was extremely quick (140); tongue white and clammy; face pale and countenance anxious; bowels costive.

Some aperient medicines were ordered; and, in case the delirium continued, twelve leeches were directed to be put to the temples.

December 27th. Has passed a restless night, the delirium continuing at intervals. The leeches were applied, and bled well. The lochial discharge continues. The infant died in convulsions this morning, and at present there is no secretion of milk.

One P.M. *The upper extremities are swollen*, from near the axilla to the wrist-joints, and over the *left wrist there are two or three faint red spots.* Pressure on any part of the limb gives great pain, particularly in the course of the vessels and on the joints. The swelling is very tense, but does not pit on pressure. The knee and ankle-joints are very painful, but the lower limbs are not swollen. The patient complains of great thirst; the skin is hot and dry; the action of the pulse rather strong, and very rapid; slight delirium, and a tremulous convulsive action of the muscles of the face.—V. S. ad ℥xij. Saline mixture, with diaphoretics.

The patient felt easier after the bleeding, but died at six P. M.

The body was examined on the following day. There was no organic disease in any part, but there was considerable effusion into the subserous cellular tissue of the abdomen; also between the pia mater and arachnoïd, and the pericardium contained above an ounce more of fluid than natural. The swelling of the upper extremities was occasioned by effusion of serum into the cellular tissue. The sinuses of the brain, as well as the veins of the abdomen, pelvis, and upper extremities, were carefully examined, but presented no traces whatever of disease.

CASE III. *Swelling of the Right Knee-joint after Parturition; Death.*

Jane House, aged thirty-two, of a delicate constitution, was seized, fourteen days after delivery of her fourth child, with *severe pain of the right knee-joint:* in a short *time the knee began to swell, and a blush of redness* made its appearance on the integument covering the joints. The pain was aggravated on pressure or motion of the part. The constitutional symptoms had very much the same character in this as in the preceding cases, but the local affection was much severer, the pain and swelling of the joint being greater. This case terminated fatally in six days.

The body was examined twenty-four hours after death, There was a considerable effusion of turbid serous fluid into the abdomen, and the peritoneum covering the pelvis and abdominal viscera was inflamed. The uterus itself was a little softer than natural, but no trace of disease could be detected in the veins of the pelvis or in the right femoral vein. There was a considerable effusion of serum into the cellular tissue covering the right knee-joint.

Two other cases of this kind have occurred in the Lying-in Hospital this year: one terminated fatally in three weeks, but no examination was allowed to be made of the body; in the other, the patient was removed from the hospital during the progress of the complaint, and I am unacquainted with the result of the case.

Although so much attention has of late been paid to diseases of the joints in particular, as well as to the various affections which occur in the puerperal state, little or no notice has been taken of that peculiar affection which forms the characteristic feature of the cases that have just been related. Dr. DENMAN, in his Introduction to Midwifery, p. 570, makes the following observations, which I presume had reference to this form of disease. "There is a peculiarity," says Dr. D. "in this (puerperal) fever, which I believe has not hitherto been observed or mentioned. It is an erysipelatous tumor, of a dusky red colour, on the knuckles, wrists, elbows, knees, or ankles, about the size of a shilling, and sometimes larger. This is almost universally a mortal sign, and, on the inspection of those who have died with this appearance, the disease has been found to have affected principally the uterus or its appendages."

The patient is first attacked with shiverings and aching pains in the limbs, or in one or more joints of the body. The painful joint soon begins to swell, and at the same time a red spot makes its appearance. Sometimes, however, the swelling is not confined to the joint, but extends along the whole of the limb, and in this case faint red spots are generally seen here and there in the course of the swelling. Sometimes also a circumscribed swelling will occur above the joint, neither the joint nor any other part of the limb being affected. If the patient is not rapidly cut off, several joints in succession are attacked in this manner; those first affected sometimes becoming better, at others remaining just as they were. In the last case which occurred in the hospital, the right knee joint was first affected, but at the end of a fortnight, just when the complaint appeared mitigated, the left ankle-joint was attacked by the same disease. By whatever name we distinguish the fever which accompanies this disease, it is essential to be aware that no one set of internal organs is uniformly affected; sometimes the head is the only part, at other times the chest or abdomen; so that Dr. Denman's assertion, that the uterus and its appendages are principally affected, has not been corroborated by the appearances found in the dissection of the cases which have come under my own observation. The fever is of a subinflammatory kind; the pulse at the commencement strong, but soon becomes quick and small, the tongue is white or of a slate colour, and, if the illness continue long, assumes a dry brown appearance. There is not a very great prostration of the strength at the beginning, and the discharges are not always suppressed or altered. Although I do not at all wish to overrate the importance of the local affections, it cannot be denied that the most remarkable feature in the case is the extreme pain which the patient experiences in the swollen part; it is as acute in this as in any other disease which I have seen. The duration of the attack varies: one case terminated fatally within forty-eight hours, another was protracted to three weeks. The period also at which the patient is attacked after delivery is equally uncertain, varying from the second to the fourteenth day. I was inclined at first to consider the disease dependant on some inflammatory condition of the veins, originating probably in those of the womb, but examination of the veins of the pelvis, as well as of the veins of the affected part, has convinced me that this opinion is erroneous: and I regret to say that dissection has as yet thrown little or no light on this singular disease. The swelling of the limbs is occasioned by serous effusion into the cellular tissue, and we generally find a similar effusion into the cavity which suffers most during the attack. Dr. Lee, in his valuable paper on Inflammation of the Veins of the Uterus, alludes to some fatal cases of this kind in which the veins of the womb were perfectly healthy, but offers no opinion on the nature of the disease itself. When the joints are attacked in uterine phlebitis, there are generally purulent depositions with destruction of the cartilages, whereas in the complaint to which I have been directing the attention of the Society, I have never seen depositions of pus, and the interior of the joints are never affected. The swelling (even when it extends along the whole of the limb) differs also from that which is observed in phlegmasiæ dolens: in the latter disease, there is no discoloration of the integuments, excepting in its advanced stage, and then black spots occasionally occur, no doubt from extravasation of blood. In the former, the discoloration exists almost from the commencement, and is of a dusky red colour, very similar to what is observed in gouty inflammation, and does not alter in the progress of the disease.

The different plans of treatment which have been hitherto adopted have been found equally unavailing. In the two first cases no local means were tried to the swollen part; in the subsequent cases copious local bleeding was resorted to, and, if with no other benefit, the severity of the pain was relieved. If the pulse is very full at the commencement, general bleeding was employed. The internal remedies have usually consisted of antimonial and diaphoretic medicines.

INAUGURAL ADDRESS.

Inaugural Address, delivered at a Meeting of the Medico-Botanical Society of London, held February 16th, 1831; PHILIP HENRY EARL STANHOPE, *President, in the chair.* By GILBERT T. BURNETT, Professor of Botany to the Society, and Lecturer in the School of Physic, St. George's Hospital, &c. &c. &c.

(Continued from page 100.)

OF the energies of our native plants the herbalists of a former age were doubtless too easily persuaded; their experience could have scarcely justified the encomiums they lavished upon many; at least, our observations will not permit us to corroborate their praises: but, however ready we may be to allow (and no one is more ready than myself,) that the curative powers of many plants have been greatly exaggerated, and that ignorance and superstition have attributed effects to other things than causes, and have often thus ascribed to various vegetables, virtues which they have not, and never had; still I can hardly think that all their asseverations could be based in error; even the greatest lies are generally founded on some little truth'; indeed, without it, they scarcely could be framed. And when we consider how truly significant are the common names of plants, such as woodbine, cleavers, sea-thongs, catch-fly, rest-harrow, choke-pear, and many others; when we reflect how justly descriptive is our native nomenclature of many of the properties of the plants to which the rustic names belong, such as bitter-sweet, hedge-mustard, water-pepper, fool's-parsley, hen-bane, dog-bane, flea-bane, cow-bane, bug-bane, fish-bane, bane-berries, bane-wort, deadly nightshade, and so on, shall we precipitately conclude that the malevolent terms alone are akin to truth, and that balm, and eye-bright, thyme or strength, worm-wood, tetter-wort and quinsy-wort, scurvy-grass, fever-fuge, and a multitude of others, are all unmeaning appellations, because forsooth the ancient cure-all, all-heal, all-good, long-life, and live-for-ever, seem, when misunderstood, somewhat hyperbolical expressions.

"Sell your coat," says the Italian proverb, "and buy betony:" wherefore should this plant have been formerly so much esteemed? So little is it now regarded, that we might almost say it is despised. This question, however, will not come alone: for the same may be pertinently asked of our dysentery, uvula, and tooth-worts, of our mad-worts, liver-worts, and gout-worts. But, even granting that some, or many, or even all, our health-promising plants, have no right to their appellations, i. e. exhibit no sensible properties when taken, (which, however, I am far from presupposing,) will it be no advance in knowledge to ascertain the fact of their inefficiency? Will it not avail us much to know that such and such plants do *not* possess either medicinal or poisonous powers, instead of continuing in unenviable doubt? for such as are unfit for physic will afford harmless, and often most nutritious food. Hence I am far, very far, from underrating such negative knowledge; and I am sure I am as far from overvaluing its importance, when I state that, in the treasury of science, it becomes positive information: just as in that language which lives alone to learning and seems to science sacred, two negatives have an affirmative, or, according to their relative situation, more than an affirmative meaning. For example, *non-nihil* and *non-nunquam* simply reverse their separate import, and may be translated *somewhat* and *sometimes*, while *nihil-non* means *every thing*, and *nunquam non* means *always*. So, as is symbolized in this apposite illustration, negations in experimental researches, when duly appreciated and properly employed, become most important positive affirmations.

But to return to the point whence this episode sprang, and to the path whence a favorite topic has so long seduced us. There are several circumstances connected with the history of quinia and cinchonia, the proximate principles of the Peruvian barks, to which, might I so far presume, I could much wish to invite the attention of my colleagues, the learned professors of Materia Medica and Chemistry; for to my mind they require much further elucidation, and many experiments seem wanting to ascertain correctly the properties of these barks, and the principles they respectively afford. The quilled or pale-brown bark was a few years since so much more highly prized than the yellow, that it was sold for sixteen shillings a pound, whilst the other would scarcely fetch a crown; and yet quinia, now so much esteemed, and believed to be the potent principle of the Peruvian barks, is abundant in the yellow, and all but absent from the quilled. Indeed, I am informed by my friend, Mr. HENNELL, of Apothecaries' Hall, one of the most indefatigable and intelligent pharmaceutic chemists of the day, that if the specimens submitted to analysis be correctly sorted, (for, in commerce, they are generally met with mixed,) no quinia at all will be found in the quilled bark, but abundance of cinchonia; while, in the yellow bark, the quinia is abundant, and the cinchonia wanting.

Now this is a result which could not, *a priori*, have been conceived: for it is the *quinia* which is now extolled for its extraordinary curative effects; which principle, be it noted, is absent, or all but absent, from the quilled bark, so lately prized for similar powers; while the *cinchonia*, which abounds therein, is disesteemed: and, on the other hand, as a counterpart to this paradox, *the yellow* bark, so long neglected, yields abundantly, almost exclusively *quinia*, the present fashionable tonic, whilst it contains none or very little of that other principle *cinchonia*, to which all the former cures of its compeer, the lance-leaved bark, must be attributed; it being, as already stated, in an equal degree devoid of quinia.

In the *red* bark both *cinchonia* and *quinia* are found, but in much smaller relative proportions. It is likewise a circumstance worthy notice, that some of the other species of cinchona, specimens of the bark of which occasionally reach us, are said to afford these principles more abundantly than any of the officinal ones; and it is also probable, as shewn by Dr. HANCOCK, that other genera may be more advantageously used as febrifuges than cinchona.

Now, from these premises, we cannot avoid the conclusion that further experiments and investigations, both botanical, chemical, and medical, are much required: for if the quilled bark really did cure ague, and of this there can be no doubt, and if in it there is little or no *quinia*, but *cinchonia* is present in abundance, either its native quinia must be converted into cinchonia, or the neglect with which cinchonia is treated can scarcely be its due. Again, the merits of quinia may perhaps have been too much extolled; or it is not impossible that the red bark, which contains the two principles in question, or a preparation or formula comprising both quinia and cinchonia, whencesoever extracted, may be found the most efficient mode of administering relief in ague.

But these are problems requiring much attentive consideration; and experience must prove whether the former confidence in quilled bark, or the present trust in quinia, be most correct. Probably cinchonia is esteemed too lightly; it demands a series of experiments to ascertain its medicinal effects. This is, however, but one of many points equally requiring investigation, and which must be more fully entered on hereafter; and it is only at this present time glanced at, to show how much and in how many ways the exertions of our Society are wanted; how much and in how many ways its members can benefit the world at large. For it is not improbable that many of these proximate principles, now considered as different and distinct, may be hereafter found to be similar in effects, if not absolutely the same in constitution, just as all the old salts of plants, viz. of wormwood, centuary, broom, and others, have been proved to be one and the same, viz. subcarbonate of potash.

The extraction of the proximate principles of plants, of those especially on which their peculiar properties depend, is doubtless a triumphant step in Phytochymics, or Vegetable Chemistry, and is another point to which I must briefly draw your attention; as it is a discovery which promises to open a new era in science, and to work a complete revolution in the armoury of physic. To the superficial observer it may seem that these discoveries, though undoubtedly of very modern date, had been long obscurely adumbrated, as it had for years been known that the stimulating powers of many plants, as of the Cruciferæ, for example, were destroyed by simple exsiccation; that the poisonous principles of Mercurialis perennis might be extracted by boiling in water, when it becomes a palatable and harmless esculent; that the virulent qualities of the Cassava are separated by heat, and that, after roasting, it is esteemed an admirable and nutritious food. This knowledge, however, differed widely from that which has enabled us to reduce and exhibit, in a constant and determined form, quinia and cinchonia as the active and proximate principles of bark; salicine from willows; veratria from colchicum and white hellebore; morphia, narcotine, and meconic acid from opium; and so forth. Great caution, almost a jealous caution, is, nevertheless, required in watching both the extraction of these principles and the records of their effects: for it is not impossible, nay, it is far from being improbable, that some of these substances are products rather than educts of the chemist's operations; just as sugar may be produced from rags, tan from saw-dust, vinegar from wood, oxalic acid from offal, and so on. Not that the mere fact of such transmutations would render the substances produced a whit less valuable than if they were educed; their value must depend upon their intrinsic worth; and it may be far more advantageous, under certain circumstances, to resort to the crucible of the chemist, than to the laboratory of nature, for many of them. We know that wood consists elementarily of charcoal and water; that starch, and gum, and sugar, are similar in their elements likewise: and that they only differ from each other in their relative definite proportions: we know that nature, by varying the atomic ratios of these few simple elements, changes, as in the ripening of fruit, tasteless lignin into powerful acids, which in their turn become converted into sugar, often impregnated with peculiar essential aromatic oils; and thus, in plants, her living retorts, Nature, from watery sap and atmospheric air, so modifies the union of three simple bodies as to form gum, sugar, starch, lignin, resins, oils, acids, alkalies, and alkaloids, with numerous other proximate principles in abundance, of every kind and in every variety; and this by merely varying the relative properties of the same simple constituents, oxygen, hydrogen, and carbon,—these three, for others are seldom and sparingly employed. We also know that in some instances our laboratories can imitate the vegetable alembics, or render their processes subservient to our designs. Thus, in malting barley, germination is suddenly checked when the starch of the grain has become converted into sugar; and by heat the same starch can be transmuted into gum. It is, therefore, not impossible that many of the more active vegetable principles may be in like manner formed, the more scarce from the more abundant. That some of the newly discovered bodies, at present, for convenience, called proximate vegetable principles, such as caffein, asparagine, piperine, and so on, are not *educts*, but *products*, is more than probable, when we find that they do not exhibit the specific effects peculiar to the substances from which they are obtained. Thus we learn from Mr. BRANDE, that coffee is narcotic, but caffein, as that celebrated chemist proved by experiment on his own person, has (at least in scruple doses,) no sensible narcotic powers; and the effects of morphia bear no proportion to the effects producible by the quantity of opium consumed in its formation. Again, asparagine does not communicate to urine the peculiar odour which asparagus is invariably found to do; and, furthermore, piperine, the so-called proximate principle of pepper, is entirely destitute of pungency and heat. These, then, and many others, will probably be hereafter shown to be products of the chemist's operations; just as beer and wine are not, as they are often called, the juice of barley and the grape, but are produced, not educed therefrom, by fermentation; and alcohol, including brandy and spirit of every kind, is not educed, but produced from wine and sweetwort by distillation, or formed by condensing the vapours which rise from bread while baking.

It may be, then, (and I repeat it for the sake of the impression which a repeated proposition is designed to make,) it may be found hereafter more profitable to form many of these substances now known as the proximate principles of vegetables, directly from their elements, or indirectly from the mutation of common and abundant matters in the laboratory of the chemist, than to procure them intermediately from plants, the living elaboratories of nature; just as oxalic acid can be made from hair, gristle, and such like refuse matters; or produced by the distillation of sugar with nitric acid, instead of being educed from the Oxalis acetosella, corniculata, &c., where it naturally exists; or as prussic acid is now obtained from prussian blue, which can be made from almost any offal, at an amazing diminution of expense to what it could be educed from bitter almonds, cherry-laurel leaves, plum and peach kernels, &c. where the acid naturally exists, and which were once esteemed its only sources. Indeed, one great object of the vegetable world would seem to be, to anticipate the arts, and to provide numerous comforts and conveniences, such as clothes and shelter, nutritious food, and efficient medicines, for man, long before he was able to provide any for himself; and not for man only, but for the whole animal creation. Of this vegetable physiology affords numerous interesting illustrations: and although at present we contemplate the processes of nature but as through a glass, darkly; although we see but in part, and know but in part, still thus far we can perceive that, whether we sleep or whether we wake, whether we rest, or whether we toil, these indefatigable servants are labouring for our advantage; that they are ever actively preparing and purveying sugar, starch, gluten, gum, cotton, wood, flax, hemp, and many other substances, with an alacrity, a perseverance, and a certainty which would be truly astonishing, were we not surrounded by such natural miracles, and did we not live in a world of wonders. Many of these works will doubtless ever remain inimitable by human art; to bounteous nature we must ever be indebted for her most precious gifts. We never can hope to penetrate the arcana of all her mysteries, although in some few particulars we can trace her course, and imitate her productions. Still, as we have already much lightened human labour by the substitution of brute strength, and superseded the use of many brutes by the adaptation of machinery, thus reclaiming much soil from the pasturage of cattle for the growth of food for man, and, by the introduction of steam and rail-roads, we shall reclaim much more; so it is not improbable that much of the labour of tilling the ground for the growth of human food may hereafter be avoided, by the immediate production of many substances from their elements, instead of deriving them intermediately through the culture of plants; or, at any rate, it is not improbable that we may so far advance in science and in art as to be enabled to convert the less into the more useful; the more into the less abundant: as wood into starch, worn-out flax, i. e. old linen, into sugar, and so on; and thus, if it were not for placing an important subject in rather a ludicrous point of view, we (in like manner as spiders and some other insects are said to devour their exuvial skins,) might hope to be enabled, after having worn out our clothes, to feed upon them, and to dine off as well as on our tables.

There is but one topic more with which at present I will intrude on your attention, but it is one which, as it most especially relates to the duties of the professor of botany, I should be inexcusable to let pass unnoticed.

Much of the obscurity attendant on the history of the effects of drugs is doubtless attributable to the careless manner in which plants have too commonly been collected and preserved, but often, still more to the errors which the ignorant and the frauds which the unprincipled commit. Hence, it is necessary that a continual check should be kept by the eye of science over the gatherers and venders of medicinal herbs. How often do we find briony root substituted for calomba, mullein leaves for foxglove, horn-beam for hops, marigold petals for saffron, cow parsley for hemlock, &c. Into one of our largest drug factories there once was brought a large quantity of Œnanthe crocata, which, had not a botanic eye been casually cast upon the heap, would have been both sold and bought for conium; and had an extract, or tincture, or powder of its leaves been used, how disastrous might have been the result. This is not a solitary instance; such mistakes are unfortunately still too common: but henceforth they can less easily escape detection, since a knowledge of botany has been made a necessarily integral part of every medical education. Indeed, much as we may value the labours and researches of the physician and the chemist who investigate the medicinal properties and constituent principles of plants, the labours of both would be often of no avail, did not the botanist aid them in determining, by constant and decided characters, the very plants in which such principles are found, and to which such properties belong; as well as in what situation and under what circumstances they should grow, at what seasons and in what states they should be collected; for all these will often much affect their potency and value: e. g. how different is the Apium graveolens growing in the light to the same plant when excluded from its access? how importantly does a wet or a dry situation affect the character of many umbelliferous plants; for the dry soil which increases the aromatic properties of some, diminishes the essential powers of others, while the wet situations which impair the aroma of these, enable those to eliminate to the full their active poisons. Again: many plants similar or nearly so, and which are frequently undistinguishable to a non-botanic eye, often possess very different properties: thus, to take only the most common and familiar cases, how important it is to distinguish Æthusa Cynapium from the true culinary parsley, the Lolium temulentum from other grasses, and so forth. Thus, how vainly should we seek in Cichorium Intybus for the hepatic influence of Leontodon Taraxacum; and yet, to superficial observers, so similar in their early states are these two very distinct plants, that they are being continually and constantly mistaken for each other; in fact, they form the pons asinorum of all inceptor candidates for botanic fame.

But I feel that it would be here a work of supererogation to illustrate more fully the utter practical inutility of many of the researches of the physician and the chemist, without the botanist would labour with them. What avails it that the physician knows that opium brings sleep, lulls pain, and stays the approach of many ills; that Peruvian bark cures ague; that jalap and scammony are drastic, and rhubarb a tonic astringent purge? What avails it that the chemist by analysis can prove that the sedative principle of opium is morphia, the tonic of cinchona, quinine; or what avails it that he proclaims the equally important facts, that certain specimens of bark submitted to his examination contain a large, and others a small, portion of one or other of the active or inert principles, without the botanist could indicate the plants which yield them, and teach to distinguish those in which the active agents the most abound, and which consequently may be the most profitably employed? Say not that the merchant or the druggist will import and prepare them to his hand: this would indeed be trusting to a rotten staff, without they were themselves instructed in that science which alone can teach to distinguish those which are found less from those which are found more efficient in their use and productive of the active agents sought. Are crops to be cultivated and cargoes to be imported on chance or bare empirical presumption, and the first notice of error be in the disappointment of the physician at the non-efficacy of his prescription, or in the vain labour of the chemist to extract the essential parts?

Besides the certain diagnoses it affords, there is another advantage of botanical system, especially of the natural system, which, although it is very much perverted and abused, holds, in my mind, a rank of no mean importance: viz. the general rule, sanctioned by experience, that plants possessing the same botanical characters often contain the same chemical principles, and produce the same medicinal effects; not always, indeed seldom, in a similar degree, but most frequently in a graduated scale. The potency being traceable in the various instances from its least to its greatest accumulation, from its lowest to its highest stages of activity. Thus, the Lactuca virosa is highly acrid, while the Lactuca sativa is bland and esculent; the Cucumis sativus an agreeable food, while the Cucumis colocynthis is a powerful medicine; the Vegetable Marrow, Gourds, and Melons, mild and innoxious, while the Momordica Elaterium is so violent in its effects as almost to be esteemed a poison. Again, the Croton Cascarilla is a grateful stomachic, while the Croton Tiglium is a most violent cathartic; the Leopard's bane may be contrasted with the artichoke, and parsley with hemlock; the Solanum dulcamara, nigrum, and tuberosum, bear hurtful berries; while those of the egg-plant and the tomato, when cooked, form a wholesome food; the pea and bean are only flatulent, while the laburnum is a poison. And furthermore, so completely are the latent properties of some plants developed in other individuals of the same species, genera, and orders, while the notorious principles of those are overshadowed or become occult in these, that, did not instances occur in different varieties of the same species, and different species of the same genera, they would seem to form more serious objections to the present distribution of the larger groups than they actually do. Thus, in one group, the Umbelliferæ, are found the venomous Conium, Œnanthe, and Cicuta, the harmless and nutritious Carrot, Parsnep, and Earth-nut, the stinking Galbanum, Opoponax, and Assafœtida, and the grateful aromatics, Cummin, Coriander, Carraway, and Dill. But, then, it should be remembered that, in the same genus, *Œnanthe*, while the roots of the species *Crocata* afford a deadly poison, those of the species *Pimpinelloides* form a wholesome food; and even in the same species, *Apium* graveolens, the cultivated Celery, is a harmless, while, in an uncultivated state, it is a deleterious plant. Once more, the milk-tree and the bread-fruit are associated with the Upas of Java; but the connexion is established between them by the figs; for, although most are harmless, one species of the genus *Ficus*, the Toxicaria, is, as its name imports, an acknowledged poison. Of these illustrations there would be no end, did time allow of the pursuit: on another occasion I may, probably, should it be sanctioned by the Council, bring the matter more at length before the Society, as it is one that requires much serious deliberation.

Vegetable physiognomy (if I may so express myself,) is a study well deserving cultivation; for it is most important to be able, on looking at a plant, to affirm, on principle, this may be eaten; that is a poisonous plant; or, again, those are suspicious vegetables: such knowledge, moreover, is not only desirable to have, but easy to be attained; and its practical utility has already been, in several instances, shown under circumstances of urgent need. It is, however, a skill in vegetable physiology, a knowledge of the laws of vegetable metamorphoses, which can alone enable us to decide such points with safety, and it is one of the most delightful of all botanical praxes to work out the relation of organs apparently, but not really, different, and thus to establish the *hetero-* and *iso-morphous* characters of plants, often improperly associated or severed; and to the rudimentary state of this branch of botany may be attributed those anomalies, those apparent paradoxes, which at present form exceptions to our natural schemes. But even this power of diagnosis may be, nay, it already has been many times perverted; and men, presuming on their wisdom, when they ought rather to avow their ignorance, have supposed their knowledge of these general laws so perfect and complete, that some have not scrupled to declare it *impossible* for nature to swerve from those they have defined, and refused to believe in the possible occurrence of exceptions. Exceptions, and numerous exceptions, do, nevertheless, undoubtedly exist: these should, however, rather stimulate us to review our natural classifications, than to discard them altogether; should lead us rather to distrust our own performance, than to accuse nature for a moment of egregious error.

The true purposes and value of the natural and artificial systems, the aid they reciprocally afford each other, and the mode in which they may be most advantageously employed in the advancement of medico-botanical science, will form another very important topic, which, with the permission of the Council, I purpose submitting to the consideration of the Society. It is one that I consider of paramount importance, and the correlative utility of these two systems is a point for which I have long most ardently contended, and one which I have not neglected to inculcate, both in my lectures at the Royal Institution, and in the medical schools of Great Windmill street and St. George's Hospital: for I am sure that either, when alone, would be a most imperfect guide; while from them in conjunction we derive a clue which will be often found to lead to discoveries of the greatest brilliancy and value. Analogy will lead to experiment, and experiment, guided by analogy, will lead us to truth.

But, to conclude. In the botanical researches of this Society, it is evident that much discretion must be exercised, so as to render complete the medicinal history of the subjects we propose to illustrate, without including in our transactions topics foreign to medico-botanical science. Hence, although your professor of botany is sensible, no one more so, of the interest and importance of anatomical and physiological, as well as systematic and economic botany; and although he would consider himself wanting in his duty to this Society, were he to neglect any of these departments, all which bear, either directly or indirectly, on each other, still he would regard himself as perverting the objects of the Society, and wandering from the designs of its institution, were he to occupy the time of the meetings, or the pages of the Transactions, by any disquisitions on mere anatomical, physiological, or systematic themes. Many of them must, of course, engage his attention, as promising to throw light on medical botany; but whenever individual research has shown them to be impertinent thereto, they cease to be objects fit for presentation here. Their value to science, however, is not the less; at other times, and in other places, if presented, according to their worth so will they be esteemed: and this seems the more necessary to be stated, lest any should precipitately conclude that general botany and medical botany are two different sciences; whereas, the one is but a part of the other, just as the fruit is but a part and production of the tree on which it grows. Hence, it must be evident that there are no means practicable of learning just so much, and so much only, of the philosophy of the vegetable world, as may be immediately applicable to the purposes of medicine, without at the same time studying the science as a whole; and this could alone efficiently be done by making it an independent subject for instruction, and enacting that an attendance on botanical lectures should henceforth become an essential part of every student's duty; for, without such knowledge, no medical education can be truly esteemed complete. The junction of botany to materia medica is absurd, as one must, of necessity, be neglected; for if, in the time allotted to the course, equal attention be paid to both, both will be imperfectly and unsatisfactorily taught. The courses must be kept essentially distinct, even when delivered by the same professor. If, in the infancy of physic, their union was tolerated, and botany studied merely because some plants afforded medicines, such an occultation no longer can be borne. Both sciences, by such a scheme, are injured, and keep each other, as it were, in thraldom. They are both sufficiently extensive and important to form separate studies.

The advantages resulting from the division of labour are too well known, and have been too long established, to need illustration here; and our Society, although akin to others, of which it would almost seem an emanation, has objects as important and distinct as those have from their antitypes. Thus, the Royal Society, which at first, and in our infant days of science, included in its fostering arms every department of philosophy, soon gave rise to other associations for the especial advancement of particular sciences: such as the Antiquarian Society, for archæological researches; the Linnæan Society, for the encouragement of natural history, whence the Horticultural, the Agricultural, the Medico-Botanical, and Zoological Societies have sprung. Thus, as science advances, each separate branch, arriving at maturity, quits the parent institution which nurtured it in youth; and hence there has arisen that brilliant galaxy of British associations, of which our country justly boasts, as the Royal Society, the Royal Society of Literature, the Royal Institution, the Medical and Medico-Chirurgical Societies, the Geological, Geographical, Astronomical, and numerous other learned associations, all striving in honourable warfare against indolence and error, all engaged in a glorious crusade to recover the holy land of science from the infidel dominion of ignorance and sloth.

Gentlemen. In attempting to develop what he considers to be the legitimate objects of your Society; in attempting to trace, as it were in outline, what he considers to be the duties of his office, your professor of botany is aware that he has very inefficiently foreshadowed the object he had in view; and yet, insufficient as the sketch avowedly is, he is sensible that, in following it practically out, he shall often have occasion, as at the present moment, to claim your indulgence for much that has been done imperfectly, your pardon for much which has been wholly left undone: and yet he doubts not that, when zeal in your service is apparent, you will kindly, from your own resources, supply that which in him seems wanting.

Your professor of botany is likewise sensible how much he must depend, how much he must be indebted to the cooperation and separate exertions of his colleagues; yet he doubts not that, from their well-known ardour in the pursuit of science, they will always befriend him in completing those accounts of medicinal plants, from time to time to be presented to the Society, and for which duties none can be more competent than themselves: for thus conjointly we may hope to be enabled to collect such ample details, and such certain records, drawn from actual observations and experiments of the principles, properties, and powers of the vegetable materia medica, as may go far towards perfecting the practice of medicine, and rendering, as HOMER says,

> "A wise physician, skilled our wounds to heal,
> More worth than armies to the public weal."
>
> *'Ιητρὸς γὰρ ἀνηρ πολλῶν ἀντάξιος ἄλλων,*
> *'Ιύς τ' ἐκταμνειν, ἐπι τ' ἤπια φαρμακα πάσσειν'.*

NATURAL ENDOWMENT.

The Differences of Natural Endowment. By J. H., Esq. Surgeon.

It is a melancholy fact in the history of science, that truth has generally been received by mankind with reluctance and aversion; and, indeed, so supported by evidence is this observation, that the opposition engendered has almost invariably been in proportion to the importance and merits of the discovery. The attention of many has been attracted to the science of Phrenology by the virulence of its opponents, who, in evincing a stronger disposition to malign its supporters than to offer the result of their own investigations on the subject, have afforded a special though negative argument in its favour. By far the greater number of those who have thought it expedient to revile phrenology, have scarcely condescended to acquaint themselves with the rudiments of the science, or they would not have charged it with doctrines which its founders have never advanced.

Nevertheless, there appear to be some who have rather mistaken than wilfully misconstrued the interpetration of its doctrines, and there are those who believe that it inculcates the dogma of utter inability in man to control the propensities and feelings of his nature. Now this is a tenet which the doctrines of phrenology more decidedly tend to controvert, than any other scheme of moral philosophy that metaphysicians have ventured to uphold from the commencement of the Christian era to the present day; inasmuch as it is the first and only system that has ever established education on the rational and substantial basis of adapting the means to the end; in other words, of regulating instruction, habits, and employment by and in accordance with the moral and intellectual endowments of individuals; that is, of cultivating the mind after such a manner as will insure the greatest proportion of knowledge, and promote that mental discipline which alone can enable us to control and direct these natural feelings and propensities. The great advantage derivable from phrenology consists in the increased power it hath given us, through the medium of education, of encouraging the action of the moral faculties to the better guidance and subordination of the lower. It is phrenology that raises education to the dignity of a science, which, if we cast but a glance on the numberless and various opinions of celebrated men upon the subject, appears to have hitherto been founded on remarkably vague and indefinite principles.

Having premised these few observations, we turn our attention to the consideration of the more immediate subject of this article, namely, the differences of natural endowment. We have heard it maintained, "that all men are born with the same feelings, and that education and external circumstances alone create the difference in the power of controling those feelings within the bounds of morality;" again, "that all men are equally capable by nature of attaining the same degree of moral excellence, if they have similar advantages from education and external circumstances;" also, "that no man possesses by nature a nobler cast of moral feelings than another." All these positions are in effect the same, and an argument against one is an argument against all. As phrenology is a science entirely founded on observation and induction, it is to these that we shall resort in the consideration of the above opinions. It is an acknowledged fact that peculiarities of temper in children may be observed before external circumstances could possibly have exercised any imaginable influence upon them. For instance, let any one remark the difference of cry and manner in various children, even within a few months after birth, upon the first occasion of their being detained from the breast by any accidental circumstance. Will the expression of all be the same? no; some will moan patiently and piteously, and others will work themselves into a state of irritation beyond all power of pacification. But it may be said, that this is owing to the constitutional disposition of some to feel hunger more acutely than others; granted that it may occasionally; yet upon the testimony of many parents who have possessed these irritable children and watched their dispositions in after life, we are warranted in concluding that it arises from temper of mind far more frequently than constitution of body. "That all men are born with the same feelings" is true in regard to number, but not with respect to degree, which may be best ascertained by observing the differences of character that exist among the inmates of such institutions as the Hôpital des Enfans Trouvés in Paris, where all are as nearly as possible subjected to the same kind of habits and education from the period of infancy. Here you will find some of a proud, wilful, and obstinate disposition; others of a meek, patient, and submissive nature: some of a cunning, sly, crafty, and deceitful character; others of a frank, free, open, and generous spirit: some of strong animal courage, though of delicate frame; and others as timid as they are robust: here you may mark one firm and inflexible of purpose; there you may see another fickle, uncertain, and inconstant of conduct: one will regard the sufferings of animals with satisfaction, and torment them for his gratification, while another, of a kind and benevolent heart, will shrink with horror and aversion from the sight: in some the animal passions will develop themselves early in life, and acquire a strength in maturer age that will cause the individual frequently to gratify or control them: while in others they are developed at a much later period, and in so moderate a degree as to seldom excite the attention or care of their possessor. Finally, we appeal to common observation and experience in support of the opinion now advanced, that there are some who from earliest youth are possessed of so strong a sense of morality that they shrink from vice as naturally as from a venomous reptile, and require an extraordinary inducement, a prolonged and seductive temptation, to bend them from their innate leaning: on the contrary, that there are others who from childhood upwards exhibit such strong propensities to do evil, that the strictest possible discipline, combined with the best education, can scarcely prevent their errors: and thirdly, that there are all the gradations of disposition between these two extremes. Now, men of these different casts of character could not be rendered *equally capable* of attaining moral excellence by means of the same education and external circumstances. To say that they would, is to affirm that the *same thing* will have the *same effect* upon two *dissimilar things*, which is an absurdity.

It is not uncommon in large families, where education and external circumstances have varied but little with respect to the children, to find one that is an absolute blot upon the credit of the others; nay, this one perhaps, on account of the perverseness of his nature, may himself have been the subject of a stricter and better education than the rest. These are no fanciful statements, such instances are frequently to be observed. Observation, therefore, has induced phrenologists to believe that men differ from each other in the endowment of *moral feeling*, as well as in *intellectual capacity*. That they differ in the latter is acknowledged by all; that they do so in the former is no less evident, though less frequently admitted. Granting, however, for the sake of argument, that men did not differ in moral feeling, but in intellectual capacity only, will not the strong and vigorous reasoning of a powerful mind create such motives for, and perceive that advantage in a system of well regulated conduct, which the weak and feeble intellect is ever blind to? Can the intelligent being and the dull one be equally advantaged in a moral sense by the influence of education? We acknowledge that if each be subjected to the power of ill instruction and evil example, the intellectual being, inasmuch as he is capable of a wider sphere of action, may probably become a more vicious member of society than his dull brother. Nevertheless, should both enjoy equal chances of deriving advantage from moral and intellectual discipline, we think it will be found (with submission to more experienced judgment,) that the individual of the greatest capacity will become the better man, in proportion to his superior power of receiving instruction and knowledge. Doubtless he will be able to reflect more soundly upon vice and its consequences than a person of contracted understanding; and the simple capability of regarding vice in its true colours is alone sufficient to engender a powerful motive for avoiding it; for the mind that possesses the power of looking upon vice as it is, knows it to be adverse to the happiness and interest of man not only hereafter but here. Who practices morality the most, seeks his own interest the best. We conclude, therefore, that the intellectual powers alone, if well cultivated, will offer motives to a man for the regulation of his passions.

Another point, too, is involved in the positions under consideration, namely, that of giving the same education indiscriminately to all. This would be to act in contradiction to the almost self-evident principle, that the same education, moral and intellectual, is by no means equally well adapted to all dispositions. The slow cannot learn with the quick; the same measures should not be used with the proud boy as the meek, or with the benevolent as the cruel, or with the diffident as the forward, or with the artful and cunning as with the open and sincere, or with the conscientious mind as with one less scrupulous. The same education and habits being, therefore, unequally fitted for the improvement of all, ought not to be employed for that purpose. All are not to be induced by the same motive to pursue the same end. On this account the positions are a second time inconsistent with reason.

Though all soils may be so cultivated and improved as to produce something, the product of each will not be of equal quality and value. Neither do phrenologists believe, for the reasons above stated, that education and example, or any means whatever, would elevate all men's minds to an equal standard of moral excellence. We are perfectly convinced of the powerful influence of education upon man, and fully aware of the extreme importance of establishing that science upon rational and well-considered principles. Well do we also know that nothing will so directly tend to increase and encourage virtue in all as good instruction and example; man has indeed no other means of improvement. But to affirm that the same education and external circumstances will make all men equally capable of practising morality, is almost as absurd as to say that the same training will make all horses equally fleet. When men are all formed by nature with the same dispositions, same constitutions, same brains, and same forms, the same education will have upon them the same effect, but not till then.

And now do we go to consider how far these views of the rational laws of man affect what is called free agency. It is not to be understood that the varying natural capability in men to attain moral excellence, implies that some are altogether unable to suppress their vicious inclinations. This, we repeat, is by no means a necessary consequence, though the opponents of phrenology have found it convenient to urge it against us. On the contrary, the position we assume as a general rule is this, that well-conducted education will enable all men to restrain their passions and propensities within the bounds of morality, but not with *equal facility*, inasmuch as some possess stronger propensities and passions than others, and this in combination with a more limited proportion of the moral sentiments. To what extent then do these views affect free agency? Why, abstractedly considered, they leave it as they found it, showing only that, though it exist in all, it *doth not exist to the same degree in* all; and this is our creed, a creed which our opponents have proved exceedingly unwilling to refrain from perverting. However, as man is more prone to evil than good, and education in general but defectively conducted, it is not surprising that selfishness and immorality predominate in the world.

But it is contrary to the justice of Providence and to Christianity, cry our opponents, that some men should possess a greater natural capability of practising morality than others. With respect to the justice of the matter, we have only to remark, that observation and induction, the only means in our power of obtaining any species of knowledge whatever, supplies every evidence in proof of the fact which such a fact is capable of bearing. On the principle, therefore, that a natural phenomenon can never warrant us in arraigning the justice of the Almighty, we dismiss the implication. As regards the charge of the fact being in contradiction with Christianity, we are not aware that it has ever been attempted to be proved, though many have made the assertion. When our opponents think proper to state the grounds upon which they found this charge, it will be time enough to reply to it. Nevertheless, we give it as our opinion that Christianity, as well as nature proclaims original differences among men. It allows that some are more, others less gifted; but it makes each answerable only for the gifts he has received: to whom much is given, from him shall much be required. St. Paul observes, "for I would that all men were even as I myself: but *every man hath his proper gift of God, one after this manner, and another after that.*" (1 Cor. vii. 7.)

Let the reader who thinks that this sentence is used in relation to intellect alone, refer to the chapter from which it is taken. Again, we are exhorted by the same, "to comfort the *feeble-minded*, support the *weak*, and be patient toward all." (1 Thessal. v. 14.) Thirdly, in the parable of the sower and his seed, "but that which fell on good ground are they, which in "an *honest and good heart*, having heard the word, keep it, and bring forth fruit with patience." (Luke, viii. 15.) Fourthly, "for there are some eunuchs which were *so born* from their mother's womb; and there are some eunuchs which were made eunuchs of men; and there be eunuchs which have made themselves eunuchs for the kingdom of heaven's sake." (Matthew, xix. 12.) This last quotation relates to the varying strength of an animal passion in man, the ill government of which is productive of no small proportion of the vice that exists in the world. We are well aware it will be said that Scripture may be quoted for any purpose, but with such futile remarks as these our opponents neither strengthen their own positions, nor weaken ours. Let them rather show how we have misinterpreted the Scriptures, and endeavour to prove the contrary from them. If they but fail in the latter, the positions we have maintained in this article will have a right to stand as proved on the authority of nature alone, for it by no means follows that all which is not especially expressed in revelation must be in contradiction with it.

Be it then specially understood that phrenologists inculcate no such doctrine as irresistibility of action; though they insist on the innateness of the faculties, and the differences of moral as well as intellectual endowment amongst mankind. We are inclined to believe, indeed, that they perceive more distinctly than any other sect of moral philosophers the truth of the following observations: "C'est l'abus de nos facultés qui nous rend malheureux et mechants. Nos chagrins, nos soucis, nos peines, nous viennent de nous. Le mal moral est incontestablement notre ouvrage, et le mal physique ne serait rien sans nos vices qui nous l'ont rendu sensible."

CRITICAL ANALYSES.

Quæ laudandaforent, et quæ culpanda, vicissim,
Illa prius, cretâ; mox hæc, carbone, *notamus*.—PERSIUS.

Researches on the Pathology and Treatment of some of the most important Diseases of Women. By ROBERT LEE, M.D., F.R.S., Physician Accoucheur to the British Lying-in Hospital and the St. Mary-le-bone Infirmary; Lecturer on Midwifery in the School of Webb street.—8vo. pp. 220. Highley, London.

IT is but within the last few years that any precise or fixed opinions have been formed respecting the pathology of two frequent and serious diseases of women, namely, "puerperal fever" and "phlegmasia dolens;" and our readers are doubtless aware that Dr. LEE has mainly contributed to our improvement, and that to his labours we are indebted for by far the most satisfactory evidence that has been brought forward of the real nature of these maladies. The work before us contains a connected view of the results of Dr. Lee's researches and labours upon these diseases: he has before published detached papers upon the same topics in the Medico-Chirurgical Transactions, but in this volume he gives us additional facts and additional arguments in support of his opinions.

Impressed with the necessity of rigidly investigating the pathology of puerperal fever, in order to reconcile the discordant statements of those who had previously written upon the subject, Dr. Lee determined to avail himself of every opportunity that occurred in his public and private practice, which could enable him to arrive at more definite and satisfactory conclusions than his predecessors had obtained. From the 1st of January, 1827, to the 1st of October, 1832, 172 cases of well-marked puerperal fever came under his immediate observation in private practice, and in the British Lying-in Hospital and other public institutions in the western districts of London. The symptoms and progress of these cases were watched with close attention; the effects of the different remedies employed were observed, and, where death took place, the alterations of structure in the uterine and other organs were carefully examined. Of fifty-six cases which proved fatal, the bodies of forty-five were examined, and in all were found some morbid change, decidedly the effect of inflammation, either in the peritoneal coat of the uterus or uterine appendages, in the muscular tissue, in the veins, or in the absorbents of the uterus; accounting very satisfactorily for the constitutional disturbance observed during life.

"The peritoneum and uterine appendages were found inflamed in thirty-two cases; in twenty-four, there was uterine phlebitis; in ten, there was inflammation and softening of the muscular tissue of the uterus; and in four, the absorbents were filled with pus. These observations are therefore subversive of the general opinion now prevalent, that there is a specific, essential, or idiopathic fever, which attacks puerperal women, and which may arise independent of any local affection in the uterine organs, and even prove fatal without leaving any perceptible change in the organization of their different textures. As the constitutional symptoms thus appear to derive their origin from a local cause, it would certainly be more philosophical, and more consistent with the principles of nosological arrangement, to banish entirely from medical nomenclature the terms puerperal and child-bed fever, and to substitute that of uterine inflammation, or inflammation of the uterus and its appendages in puerperal women. Puerperal peritonitis and peritoneal fever are terms not less objectionable than puerperal fever; for in many fatal cases there is no proof whatever of the existence of any morbid affection of the peritoneum." (P. 3.)

No experience of our own would justify us in demurring to these opinions, viewing them even in their fullest extent; but we must observe, that M. TONNELLÉ, whose very valuable series of papers on Puerperal Fevers were published in vol. 8, new series of this Journal, admits an anomalous or ataxic form of the disease, which he rarely observed except during the course of an epidemic. In this species of the disease, M. T. states that, "upon dissection, there was scarcely any appreciable alteration detected, and certainly none which would explain the death of the patient."* We are inclined to believe that such cases are extremely rare, but the authority of M. Tonnellé is too trustworthy to justify us in refusing to admit their occasional occurrence.

When we consult the works of the most celebrated writers on puerperal fever in this country, it clearly appears that they all describe the disease as commencing with a sense of soreness, or exquisite tenderness, in the region of the uterus; and that, where it proves fatal, the appearances on dissection afford unequivocal proofs of inflammation of one or more of the pelvic and abdominal viscera. The bodies of fifty-six women were examined who had died of puerperal fever in the general hospital at Vienna, in 1819; and in all of these, with the exception of two, traces of inflammation were found in one or more of the abdominal viscera.

After referring to various writers upon the subject, Dr. Lee mentions it as a curious circumstance, that in none of their works has the most remote allusion been made to inflammation of the veins, absorbents, or any of the other structures of the uterus, except the peritoneal covering; though several authors have accurately described the symptoms which characterize their morbid states. Dr. Lee enumerates the following as the principal varieties of inflammation of the uterus and its appendages in puerperal women.

"1. Inflammation of the peritoneal covering of the uterus and of the peritoneal sac.

"2. Inflammation of the uterine appendages: viz. the ovaria, Fallopian tubes, and broad ligaments.

"3. Inflammation of the mucous and muscular, or proper tissue of the uterus.

"4. Inflammation and suppuration of the absorbent vessels, and veins of the uterine organs." (P. 18.)

These varieties of uterine inflammation may take place independently of each other, though they are most frequently met with in combination.

Inflammation of the uterine organs, like inflammation of the lungs and other maladies which assume an epidemic form, occurs more frequently at one season than another; and at one period the peritoneum is the tissue most commonly affected, whilst, at other seasons, the deeper-seated tissues are almost invariably found affected by the inflammation.

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* London Med. and Phys. Journal, October 1830, p. 309, where cases of this variety of puerperal fever are given.—REV.

"That there is no essential difference between these varieties of uterine inflammation is proved by the circumstance, that in the course of a few days, in the same ward of the British Lying-in Hospital, and in patients who were placed in contiguous beds, during the prevalence of the epidemic, when the disease appeared to be communicated from person to person, peritoneal inflammation, uterine phlebitis, and the other varieties enumerated, all occurred in their most characteristic form. In some patients the local and constitutional symptoms indicated the presence of acute inflammation of the serous covering of the uterus; and in those cases where active depletion was employed at the commencement of the attack most frequently a speedy recovery took place. In other examples, at the onset of the disease, there was comparatively little pain in the region of the uterus, the pulse was from the beginning rapid and feeble, and the symptoms were such as to contraindicate the use of bloodletting and cathartics. Such cases usually terminated fatally, in defiance of local bleeding and the exhibition of mercury and opium, and other remedies; and, on examination after death, either the veins, the muscular structure, or the appendages of the uterus, were found to be the textures most frequently inflamed." (P. 19.)

"*Inflammation of the Peritoneal Covering of the Uterus, and of the Peritoneal Sac.*" The symptoms are great tenderness of the hypogastrium increased by pressure, with pyrexia. When the attack is violent, the patient generally lies upon her back, with the knees drawn up to the trunk of the body. The abdomen is at first soft and flaccid, and, except in the region of the uterus, is frequently not affected by pressure. Though an enlarged and painful state of the uterus is never altogether wanting, "yet the pain often undergoes exacerbations similar to after-pains, and is frequently mistaken for these by careless observers," and the true character of the disease is overlooked until a great part of the peritoneal sac is inflamed.

"The whole abdomen then becomes swollen and tympanitic, and the pain either wholly subsides, or becomes still more intense than at the commencement. Diarrhœa and vomiting of black or dark green coloured fluids follow, as in other fatal inflammatory diseases of the abdominal viscera, the pulse becomes extremely rapid and feeble, the tongue dry and brown, the lips and teeth are covered with sordes, and death follows at no very remote period." (P. 21.)

In different individuals, the disease varies considerably in its commencement. Sometimes the attack of pain is sudden, at other times the ordinary increased sensibility of the uterus, remaining after natural labour, passes insensibly into the acute pain increased by pressure, the chief pathognomonic symptom of this affection. At the accession, there are generally rigors, which are partial and slight, or general, and so severe as to produce shivering of the whole body.

"The cold stage, after a longer or shorter duration, passes away, and is succeeded by heat of skin, suffusion of the countenance, acceleration of the pulse, and quick respiration, thirst, frequently nausea or vomiting, and vertigo or intense pain across the forehead. Cough is also a common symptom of the disease. The rigors precede, accompany, or follow the increased sensibility of the uterus. In some of the most severe cases there has been no distinct rigor; but a quick pulse, hot skin, and hurried respiration have rapidly succeeded to the uterine pain. In most of the fatal cases the countenance has, from the commencement, been anxious and pallid, and the extremities cold.

"There is no uniformity observable in the appearance of the tongue in puerperal peritonitis. It is sometimes entirely covered with a thin, moist, white, or cream-like film; at other times, it is of a deep red, or brown colour in the centre, with a thick yellow or white fur on the edges.

"The lochia are often entirely suppressed; in other cases, only diminished in quantity. In some instances they have an offensive odour. The mammæ usually become flaccid; yet, in some fatal cases, the milk has been secreted until a short period before death. The urine is often passed with pain and difficulty." (P. 21.)

Diagnosis. Dr. Lee states that this variety of uterine inflammation is often confounded with disordered states of the intestinal canal: irregular spasmodic contractions of the uterus, which constitute after-pains; hysteralgia; and "simple suppression of the lochial discharge." If by "simple suppression of the lochial discharge," Dr. Lee would imply the mere cessation of the discharge, without its being accompanied by any other symptoms indicative of peritoneal inflammation, we hope and believe that no practitioner would commit the blunder that is here supposed.

In cases of disordered states of the bowels after delivery, the pain is from the commencement diffused over the whole abdomen; it is a griping rather than an acute pain, does not commence in the region of the uterus, and is but little, if at all, aggravated by pressure. The abdomen is generally soft, puffy, and distended; the tongue loaded; there is thirst and headach; neither the lochia nor the secretion of milk are suppressed. The febrile attack is usually preceded by symptoms of derangement of the bowels.

Puerperal peritonitis is generally developed before the end of the fourth day after delivery, and sometimes even within twenty-four hours; whereas, this affection rarely appears until the termination of the first week.

"It is sometimes difficult to distinguish inflammation of the peritoneum from after-pains and hysteralgia. Where the pulse is accelerated, the remissions of pain incomplete, the lochia scanty or suppressed, and the hypogastrium tender on pressure, we shall arrive at a correct diagnosis, by considering the peritoneal coat of the uterus in a state of congestion and inflammation, and employing antiphlogistic treatment. There are few puerperal women, except those of a feeble and irritable constitution, or who have been previously exhausted by profuse hemorrhage, or some chronic disease, who are seriously injured by cautious depletion, local or general; and where death has followed the abstraction of sixteen or twenty ounces of blood from the arm, the fatal result may fairly be attributed to disease, and to the neglect of the remedy rather than to its abuse. In cases of intestinal irritation, I have often found the local abstraction of blood followed by decided relief: and the same holds true with respect to the severe irregular pains without inflammation, which often occur subsequently to delivery, and do not yield to the ordinary means of treatment." (P. 23.)

Nine fatal cases, with the dissections, are detailed, to illustrate the phenomena of puerperal peritonitis and inflammation of the uterine appendages.

Dr. Lee next offers some remarks on *inflammation and softening of the proper or muscular tissue of the uterus.* In all the cases of this kind which he has observed, the resources of nature and of art have proved equally unavailing in arresting its fatal course. In most of his observations upon this subject, Dr. Lee coincides with M. Tonnellé,* whose opinions he quotes. Upon one point they differ. Dr. L. says, "that the destruction of the healthy organization of the proper and internal tissues of the uterus is the consequence of an inflammatory process, and not of any peculiar specific action of the parts, or an altered state of the blood, as some German and French pathologists have maintained, may safely be inferred from the symptoms," &c. M. Tonnellé,† on the other hand, remarks, that in ramollissement of the uterus, the constant and determinate symptoms of inflammation are wanting; that inflammation does not destroy life with such terrible rapidity, especially when it attacks an organ which is not immediately necessary to the existence of the individual; and that it appears evident, therefore, that inflammation in such cases is but an accessory phenomenon, and a sort of veil behind which is concealed the really active cause. He further states, that he has many reasons for believing that this disease of the uterus depends upon a vitiated condition of the blood; but he confesses "that facts are yet wanting to confirm this, at present, hypothetical opinion."

Dr. Lee relates three cases of softening of the tissue of the uterus, and for additional examples of this formidable disease we refer to our Journal for October 1830.

"*Inflammation and Suppuration of the Absorbent Vessels of the Uterus.*" We believe that M. DANCE was the first pathologist who observed this species of disease. M. Tonnellé has also recorded several examples of it;‡ but, although he was not aware of the fact, the following case had been published in this country several months before he wrote upon the subject in the Archives Générales.

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* London Med. and Phys. Journal. p. 300, for October 1830.—REV.

† Ibid., p. 303.—REV.

‡ Ibid., July 1830, p. 10.—REV.

A woman, æt. thirty, in an advanced state of pregnancy, was admitted into that hospital on July the 1st, under the care of Mr. Cæsar Hawkins, in consequence of sloughing of the skin covering a diseased bursa of the patella. The removal of the bursa was followed by great constitutional disturbance, and, on the 14th, labour came on. Two days after, symptoms of uterine inflammation made their appearance, and on the eighteenth day death took place. Though the pain was relieved by bleeding, she never rallied after the attack. On examining the body, some puriform lymph was found in the pelvis, but there was no increase of vascularity in the peritoneum. In the broad ligaments some fluid was also effused, and on each side numerous large absorbent vessels were observed passing up with the spermatic vessels, to the receptacle of the chyle, which was unusually distended. All these vessels, and the reservoir itself, were filled with pus; but that in the receptacle was mixed with lymph so as to be more solid; the vessels themselves were firmer and thicker than usual. The thoracic duct was quite healthy. The uterus was scarcely contracted, and the internal surface of the lower half was soft and shreddy and in a state of slough. The upper part, where no pus was found externally, was also healthy, or nearly so on its inner surface.*

It will be seen, by referring to the essays of M. Tonnellé, already quoted, that inflammation of the absorbents of the uterus, of the receptaculum chyli, and thoracic duct, occurs frequently in puerperal women, and that it gives rise to the same constitutional disturbance as uterine phlebitis. It appears, indeed, as Dr. Lee observes, that these varieties of uterine inflammation are frequently combined; and it is probable that in both the purulent fluid is conveyed by the absorbents and veins into the mass of circulating blood. "The local symptoms of this affection are often so obscure as to escape detection during life; while the constitutional symptoms, which sometimes resemble in a striking manner the effects produced by specific poisons, are so virulent as not to yield to any remedies, however early and vigorously employed."

"*Inflammation of the Veins of the Uterus, or Uterine Phlebitis.*" In healthy women, uterine phlebitis sometimes commences within twenty-four hours after an easy labour, with pain more or less acute in the region of the uterus, accompanied or followed by a severe rigor, or rigors, suppression of the milk and lochia, acceleration of the pulse, cephalalgia, or slight incoherence, great general uneasiness, sometimes nausea, vomiting, and diarrhœa.

"These symptoms, after a short duration, are succeeded by increased heat, tremors of the muscles of the face and extremities, rapid feeble pulse, anxious and hurried respiration, great thirst, with brown dry tongue, and frequent vomiting of green-coloured matters. The sensorial functions usually become much affected, and there is a state of drowsy insensibility, or violent delirium and agitation, which is soon followed by symptoms of extreme exhaustion. The whole surface of the body not unfrequently assumes a deep and peculiar sallow or yellow colour, or a petechial or vesicular eruption appears on different parts of the body. The abdomen also sometimes becomes swollen and tympanitic, and some of the remote organs of the body, such as the lungs, heart, brain, liver and spleen, or the articulations and cellular membrane, and muscles of the extremities, suffer disorganization, from a rapid and destructive congestion and inflammation.

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* Med.-Chir. Trans. vol. xv. p. 64.

"There is scarcely an organ which has not been observed to become secondarily affected from inflammation and suppuration of the uterine veins. The vessels of the brain sometimes become greatly congested, and lymph is effused upon the surface of the pia mater, or serum into the ventricles; portions of the cerebral pulp have become softened and disorganized, or purulent infiltrations have taken place into the cerebral substance.

"In other individuals, whose lungs had previously been healthy, a rapid and destructive inflammation of the pleura has taken place, or portions of the pulmonary texture have become condensed, of a dark red colour, or infiltrated with pus. In four cases, which have fallen under my observation, where there had been only obscure pain during life, with slight cough and dyspnœa, a copious effusion of lymph and serum was found within the cavities of the thorax; the pleura was covered with false membranes, and portions of the lung had fallen into a state of complete gangrene. In one individual the pleura had given way by sloughing, and the right side of the chest was found distended with air. Gangrene also sometimes takes place rapidly in those parts of the body on which the patient rests, and the same process is established in other soft parts where no pressure has been made. In a case related by Cruveilhier, which did not prove fatal, the nose became black and gangrenous." (P. 48.)

Amongst other occasional symptoms of uterine phlebitis, Dr. Lee mentions a sudden and destructive inflammation of the eyes, from which patients have been deprived of sight many days before the termination of life. In two cases which came under his care, the conjunctiva of both eyes, without much pain, suddenly became intensely red, the cornea opaque, and the eyelids much swollen, and under their lining membrane a large serous deposition took place; lymph and pus were also effused into the anterior chamber, and in one the cornea ultimately burst. Deposits or infiltrations of pus, of enormous extent, also took place into the cellular membrane, near the large joints, and between the muscles of the extremities. Upon this subject Dr. Lee quotes M. Tonnellé, to whose cases we refer.*

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* London Med. and Phys. Journal, September 1830, p. 199 et seq.—Rev.

Sometimes uterine phlebitis begins at a later period after delivery, and in a much more obscure and insidious form, without pain or sense of uneasiness in the region of the uterus, or any other local symptom by which the affection can be recognized. The uterus may return to the reduced volume it usually assumes after delivery; the lochia may continue; and the inflammation and suppuration of the veins, which have caused the whole of the constitutional disturbance and destructive lesions in distant parts of the body, may have been wholly overlooked.

"Inflammation of veins rarely takes place in any part of the body, where it cannot be referred to a wound, or to some specific cause externally applied to the coats of the vessels. In uterine phlebitis, the inflammation cannot, it is true, be traced in all cases to the semilunar-shaped orifices in the lining membrane of the uterus which communicate with the sinuses, where the placenta has adhered; yet it scarcely admits of a doubt, that the frequent occurrence of the disease arises from the orifices of these veins in the lining membrane of the uterus, being left open after the separation of the placenta, by which a direct communication is established between the cavities of these veins and the atmospheric air, in a manner somewhat analogous to what takes place in amputation and other extensive wounds. Such a condition of the uterine veins, in consequence of the separation of the placenta, must be favorable to the production of inflammation; and inflammation once excited is seldom limited to these veins, but extends with greater or less rapidity along the continuous membrane of the uterine veins, to the spermatic or hypogastric, and from thence to the vena cava and its principal branches, which return the blood from the lower extremities."* (P. 51.)

The various alterations of structure produced by inflammation in the veins of the uterus, are accurately described by Dr. Lee. The vena cava itself does not always escape, the inflammation spreading to it from the iliac or from the spermatic veins.

"Uterine phlebitis appears to result from the mechanical injury inflicted upon the uterus, by protracted labour from the force required for the extraction of the placenta, in uterine hemorrhage, from retained portions of the placenta undergoing decomposition in the uterus, the application of cold, and perhaps of contagion, or from any of the causes which produce the other varieties of uterine inflammation. M. Dance considers deranged states of the lochia to be a frequent cause of the disease, but these are consequences, and not causes of uterine phlebitis." (P. 54.)

The origin and course of the symptoms above described are sometimes modified; but for the account of these variations we must refer to the work itself.

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* See a paper by the author, in the Philosophical Transactions for 1832, on the Structure of the Human Placenta and its Connexion with the Uterus.

Uterine phlebitis is always dangerous, but not always fatal. That it often occurs in puerperal women, where it is not suspected during life, and where the symptoms are referred to other causes, Dr. Lee conceives to be demonstrated by the fact, that, in the spermatic and hypogastric veins of females advanced in years, calcareous concretions, and various other proofs of disorganization, have frequently been observed, which must have been produced by attacks of acute inflammation at some remote period. In many cases where the existence of uterine phlebitis was proved by the extension of the disease to the iliac and femoral veins, complete recovery followed.

The "historical view" of uterine phlebitis, given by Dr. L., is highly curious and interesting: it shows how near some pathologists have previously been to arrive at the convincing knowledge of its nature which we now possess, and for which we are so greatly indebted to his indefatigable industry and talent.

Twenty cases and dissections of examples of this disease are related in the work.

The causes of inflammation in the uterine organs of puerperal women are involved in great obscurity. Sometimes the inflammation is distinctly referrible to injury of the uterus during severe labour, to exposure to cold and moisture, or irregularity of diet soon after delivery: but frequently it arises in its most malignant form where none of these causes have been applied, and where it can only be referred to some peculiar noxious constitution of the atmosphere, or to contagion. Dr. Lee refers to many authorities who have touched upon the question of the contagious nature of the disease.. As usual, upon such questions we have much diversity of opinion. For himself, Dr. L. says, that the facts he has observed, though they have led him to adopt the opinion that the disease is sometimes communicable by contagion, yet they have not been sufficiently numerous, or of so decisive a character, as to dispel every doubt on the subject. He states that it has occurred in many cases, in the most destructive form, where contagion could not possibly be supposed to have operated as the cause. In other instances, however, he adduces quite sufficient evidence to show the contagious nature of the disease. For example: in the last two weeks of September 1827, five fatal cases of uterine inflammation came under his observation. All the individuals so attacked had been attended in labour by the same midwife, and no example of a febrile or inflammatory disease of a serious nature occurred during that period among the other patients of the Westminster General Dispensary, who had been attended by the other midwives belonging to the institution. Other facts of a similar nature are mentioned, and Dr. L. concludes by remarking, that we certainly owe it as a duty to our patients to act as if the contagion always existed.

Upon all subjects connected with female diseases Professor Jörg's opinion is deserving of attention; and, upon reference to his work on the Diseases of Women, we find he is decidedly of opinion that "puerperal fever" is a contagious disease.[*] But whatever conclusion we may arrive at as to the contagious or non-contagious character of the disease usually called puerperal fever, the symptoms, morbid appearances, and influence of remedies, all prove, whatever the nature of the remote cause may be, that it acts by exciting inflammation of the uterine organs. It is, perhaps, difficult to determine whether this inflammation be of a common or specific kind. Dr. Lee mentions some facts which seem to prove that there is some connexion between erysipelas and puerperal fever.

Treatment of Uterine Inflammation in Puerperal Women. Sometimes the inflammatory disposition is so slight as to yield readily to opiates and fomentations. CHAUSSIER and others have been so convinced of the advantages of employing these remedies, with the view of preventing attacks of the disease, that they have caused all patients recently delivered to take at intervals Dover's powder, and to apply cataplasms. In cases of intestinal irritation, after-pains, and various spasmodic affections of the uterus and abdominal viscera, this plan of treatment will prove successful. In the milder forms of uterine inflammation, a spontaneous termination of the disease not unfrequently takes place: but when the inflammation is fully developed, and where it exists in a severe sporadic or epidemic form, local and general bleeding, and other antiphlogistic remedies, must be early and vigorously employed.

"In the treatment of puerperal fevers, the following are the principal objects we should keep in view: first, to subdue the local inflammation of the uterine organs; and secondly, to moderate the constitutional disturbance which the local inflammation invariably produces. In fulfilling these indications, no exclusive plan of treatment should be adopted; but we ought, according to the peculiarities of each case and stage of the disease, to employ blood-letting, mercury, opium, cathartics, diaphoretics, blisters, and whatever other means we can discover to possess any influence in controlling the disease." (P. 102.)

Dr. Lee highly appreciates the good effects of bleeding, but the results of his experience do not confirm the accuracy of the conclusions drawn by some authors, that in all cases the early employment of bleeding will cure the disease. "It is always an affection attended with great danger, and it not unfrequently runs its course rapidly to a fatal termination, in spite of the most prompt application of remedies."

In combination with bleeding, eight or ten grains of calomel, with antimonial powder and opium, should be given every three or four hours till the symptoms begin to subside. "Upwards of fifty grains of calomel have been given in many cases with decided benefit, and in two only out of 170 cases has the mouth been severely affected." After the second dose of calomel, Dr. Lee has often given, with advantage, a strong purgative enema, followed by a cathartic draught. In some cases, after the operation of the medicine, the pain of the uterus, which had only been relieved, completely subsided. Sometimes a second bleeding is necessary: but "however much the patient may complain of uterine pain, if the pulse exceed 120 and is feeble, and if the powers of the constitution be much reduced by the previous treatment, blood should not be taken a second time from the arm." If the pain continue undiminished six or eight hours after the first bleeding, or even later, and the pulse be full and not very rapid, and the strength of the patient but little impaired, a second bleeding of twelve or fourteen ounces may be practised.

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[*] "Die Ansteckung allein reicht hin, um das Uebel (Kindbettfieber) enstehen zu lassen, und die beste und dauerhafteste Gesundheit ist in diesem falle nicht im stande, gegen dasselbe zu schützen." *Handbuch der Krankheiten des Weibes.* Von Dr. J. C. G. JÖRG. Leipzig, 1821, p. 794.—REV.

"It ought, however, to be remembered, that much greater caution is required in having recourse to the second than the first bleeding in puerperal peritonitis; and where we are not convinced that it is absolutely necessary again to abstract blood from the arm, it is better to repeat the leeching. In no case of peritonitis which has fallen under my care has it appeared necessary or safe to bleed from the arm a third time, and in a very large proportion of cases only one bleeding has been had recourse to." (P. 104.)

Dr. Lee speaks very doubtfully of the effects of spirits of turpentine given internally. Doulcet's treatment by emetics, of the success of which such exaggerated reports were raised, is altogether condemned. "In no case have I considered it safe to administer emetics in any stage of the complaint, and I cannot conceive it possible for a case to occur in which the treatment should chiefly or exclusively be conducted on the plan of Doulcet."

Blisters, and the external application of oil of turpentine often relieve the pain.

The use of general and local warm baths will depend upon the state of the patient. Recolin, Dance, and Tonnellé* highly recommend the injection of warm water into the vagina and cavity of the uterus. Dr. Lee has tried it several times with decided advantage.

During the first stage of the disease, stimulating remedies are of course improper; but when the inflammatory symptoms have been subdued, and the patient is in a state of great exhaustion, quinine, ammonia, wine, &c. sometimes produce the happiest effects.

"I cannot too strongly urge the necessity of continuing to employ these remedies whilst the slightest hope of recovery is entertained. I have seen several patients restored to health, where the pulse had risen to 160, and was so feeble as scarcely to be felt at the wrist; where there was constant delirium, and the most alarming prostration of strength. Recovery has even taken place, in some cases which I have observed, where the abdomen has become tympanitic, and effusion to a considerable extent had taken place into the abdominal cavity. In no acute disease is it of greater consequence than in this now under consideration, that the patient should be visited by the medical attendant at short intervals, and that the effects of the remedies he prescribes should be narrowly watched." (P. 111.)

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* London Med. and Phys. Journal, December 1830, p. 509.—Rev.

With regard to the treatment of inflammation of the uterine appendages, and of the deeper-seated tissues of the uterus itself, whether of the absorbents, veins, or of the muscular structure, the symptoms are, says Dr. L., from the commencement such as commonly contra-indicate the use of general bloodletting. If the local pain is severe, leeches and warm fomentations are the most appropriate remedies; "but, as far as my own observations extend, we are not at present in possession of any remedial means which effectually control those varieties of inflammation of the deeper-seated structures of the uterus which I have endeavoured to describe." The French physicians, however, believe that we possess a powerful remedy, even in the worst cases, in mercury, employed so as to excite salivation.*

Prophylactic Treatment. It is evidently of great importance to prevent, if possible, the occurrence of a disease so destructive and so unmanageable. For several days after labour, every puerperal woman should take as much care of herself as an individual who is recovering from an attack of continued fever, or inflammation of some important viscus. Fatigue, exposure to cold, and irregularity of diet, are carefully to be avoided. Acrid cathartics should not be given soon after delivery, and no unnecessary pressure should be made upon the abdomen. All manual operations are to be carefully and tenderly performed, and portions of placenta should be prevented from remaining to become decomposed within the uterus.

"I cannot conclude this important subject without pointing out the urgent necessity which there exists for a full investigation of the means best calculated to prevent the occurrence of puerperal fever or uterine inflammation in Lying-in Hospitals, where its dreadful fatality has been recorded by all writers since the foundation of these institutions. From the registers of the British Lying-in Hospital, the Maternité at Paris, the Dublin Lying-in Hospital, and the tables of M. De Châteauneuf, it is proved that the average rate of mortality greatly exceeds that of institutions where individuals are attended at their own habitations; and if it should ultimately appear that all precautions are unavailing in diminishing the numbers attacked by the disease, it becomes a subject deserving of the most serious consideration, on the ground of humanity, whether Lying-in Hospitals should not be altogether abolished, as injurious rather than beneficial to society. From what has fallen under my own observation in the British Lying-in Hospital, and other similar institutions in this metropolis, where the utmost attention is paid to ventilation and cleanliness, and where the wards are not over-crowded with patients, I cannot hesitate to express my decided conviction that, by no means hitherto discovered, can the frequent and fatal recurrence of the disease be prevented in Lying-in Hospitals, and that the loss of human life thereby occasioned completely defeats the objects of their benevolent founders." (P. 114.)

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* Ibid. p. 502.—Rev.

In the succeeding pages, Dr. Lee treats of crural phlebitis, which term he proposes in place of *phlegmasia dolens*, as more indicative of the pathological nature of the disease; many cases and dissections are given tending to establish the views he maintains upon this subject, and to which we have before referred.* Some examples of "crural phlebitis" in men are also related. The valuable and original paper contained in the first chapter of the second part of the work, "on the Connexion of the Placenta and Fœtal membranes with the Uterus" we published from the Philosophical Transactions:† in the present volume, however, it is somewhat enlarged. We shall probably have occasion again to refer to this subject in consequence of the very unjustifiable and unfounded charge of plagiarism which was recently brought forward against Dr. Lee, at the Westminster Medical Society.

The volume terminates with some brief remarks on *uterine hemorrhage*. This subject, however, is very briefly treated, and we therefore forbear from entering into a formal criticism of some practical opinions with which we cannot altogether coincide.

We cannot too strongly recommend Dr. Lee's work to the attention of the profession, and especially those who are particularly occupied in the management of female complaints. It contains by far the most valuable contribution to our knowledge, that has been published in this country upon the very important diseases on which it treats, and we may suggest that the study will be made additionally interesting by comparing the practical experience of Dr. Lee with that of M. Tonnellé, to whose valuable papers we have so often referred in the course of the present review. For the convenience of our readers, many of whom may probably not have the Archives Générales in their possession, we have quoted the translation of M. Tonnellé's essays instead of the original; and we, therefore, take this opportunity of vouching for the fidelity with which they were transferred from the French journal to our own pages.

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* London Med. and Phys. Journal, March 1830, p. 267.—Rev.

† Ibid. July 1832, p. 71.—Rev.

An Introduction to the Atomic Theory; comprising a Sketch of the Opinions entertained by the most distinguished ancient and modern Philosophers with respect to the Constitution of Matter. By CHARLES DAUBENY, M.D. F.R.S., Professor of Chemistry in the University of Oxford.—8vo. pp. 147. Murray, London.

THE theory of definite proportions, as taught by DALTON, and as now received universally throughout the whole of the philosophic world, is, perhaps one, of the most brilliant and important truths ever revealed and confirmed by experimental researches; being to chemistry what the laws of gravity are to astronomical science.

We need not remind our readers, that the author of this theory received, during the meeting of naturalists, held at Oxford last summer, one of the highest honours, and one of the most gratifying rewards which that far-famed university could bestow; being made, in public convocation, an honorary Doctor; along with three other celebrated philosophers, BROWN, FARADAY, and BREWSTER.

The work now before us is another welcome tribute of respect paid by the same university to the genius of Dalton; and we think that Dr. DAUBENY has done well, not only by giving to the world a concise and familiar explication of Dalton's system, but also by having added the weight which his official situation as Professor of Chemistry in the university of Oxford must give to any doctrines he supports.

We are much pleased with some casual observations that occur in the preface, upon the attention that should be paid, and the encouragement afforded, to the study of the natural sciences: it shows that, although our universities are old, and the ancient regime is at times too long and too strictly adhered to, still the importance of modern sciences and modern discoveries are not wholly overlooked; and doubtless, by the praiseworthy exertions of their ardent admirers, rewards will be secured to, and honours regularly conferred upon, the students in these, as well as in the more ancient departments of philosophy.

Dr. Daubeny has divided his essay into four parts, or chapters, to which an appendix and some additional notes are affixed. In the first chapter, he gives a brief "sketch of the opinions entertained respecting the constitution of matter, before the laws of definite proportions were discovered." In the second "an outline of those modern discoveries respecting the definite proportions in which atoms combine, which seem to prove the existence of ultimate atoms." The third chapter is "on the applications of which the laws of definite proportions are susceptible;" and the fourth contains "arguments derived from other branches of modern science in favor of the existence of indivisible particles, and an inquiry as to how far the doctrine of definite proportions may have been anticipated by the ancients."

It will be seen from this prodromus, that, although the work is small, its scheme is comprehensive, and the field which the author passes over one that is fertile, not only with physical truths, but also with classical recollections; and these his previous academical pursuits would not allow the writer to neglect. It is, therefore, apparent that the volume is designed not so much for the mere chemical tyro, as for the scholar and the gentleman.

We shall proceed to make some few extracts from the several chapters, as samples of both matter and manner; and the following is a proof of the fair and candid manner in which the opinions of the ancients, by which some would swear, are discussed.

"Two opinions have divided the ancient as well as the modern world; the first, that matter is composed of an assemblage of particles incapable of farther division; the second, that there is no limit to its divisibility, the smallest conceivable body still consisting of an infinity of parts.

"For an exposition of the former doctrine we commonly appeal to the writings of the Epicureans; but the notion itself may he traced much farther back. It formed indeed the groundwork of the cosmogony of Democritus, and was by him derived from Leucippus, who is generally regarded as its author.

"It is however stated, that the same opinion was held by Moschus, a Phœnician, who is supposed by some to have flourished before the Trojan war, and if, as has been imagined, the monads of Pythagoras were corpuscular atoms, the Egyptians, from whom that philosopher derived so many of his tenets, may probably have a claim also to this.

"It has been likewise shewn by Mr. Colebrook that the Hindoos from a very early period have embraced the doctrine of atoms, although the actual date of the system of philosophy into which this opinion enters is not fully made out.

"According to Kanadi, the author whom he quotes, atoms constitute the last term of the division to which matter can be subjected. They are too small to be objects of sensation, for the particles of dust that are seen in a sunbeam, which are the most minute of visible things, are composed of several of them. They are simple and not compounded, otherwise the series would be endless, and were it pursued indefinitely, there would then be no difference of magnitude between a mustard seed and a mountain, a gnat and an elephant, each alike containing an infinity of particles. The ultimate atom therefore is simple. The first compound consists of two atoms, and the next of three double atoms; for if only two were conjoined, magnitude could hardly ensue from their union, since the latter must be produced either by the size or the number of the particles: it cannot be by their size, and must therefore be by their number. The atom, then, is laid down to be the sixth part of the mote which we see in the sunbeam.

"Such was the doctrine that appears to have been most current among the Hindoo philosophers; but Mr. Colebrook informs us, in another memoir, that it was objected to by the orthodox, some of whom, who professed to found their opinions on the text of the

Indian scriptures, even argued against the existence of a material world, as was the case with some of those who rejected the atomic theory in Greece, with Berkeley in England, and with the more modern school of natural philosophy hardly yet extinct in Germany.

"Nor is it surprising that notions which have stood their ground till the present advanced state of science, should have been broached at so early a period: as the first poets are pregnant with the grandest conceptions, so the earliest philosophers often light upon the most sublime truths; astonishing us with an intermixture of the noblest views of nature with the most crude and vulgar conceits, and often leaving to their successors little more than the task of selecting from the mass of error the grains of truth which are disguised by and confounded with it.

"Thus, in the writings of Lucretius, we are struck in one page by the philosophical spirit which seems to anticipate the discoveries of modern times, in propounding a system not very different from the doctrine of *latent heat*, and maintaining, in opposition to Democritus, that the descent of heavy and light bodies *in vacuo* is equally rapid; and in the next are provoked at the puerile manner in which the poet attempts to account for the independence of the Will, by imagining an occasional deviation from a straight line to take place spontaneously in some of his atoms, whilst descending through space.

"It is the same with that part of his system which relates to the formation of the material world; we shall see reason perhaps to consider the position, that all bodies are composed of a certain number of ultimate particles, more consistent than any other with the discoveries of the present day; but we are not therefore the less sensible of the absurdity of supposing the beautiful variety of nature to be the result of a fortuitous concourse of insentient atoms, differing from each other solely in the mechanical properties of size and figure.

"The doctrine itself is not the less probable, because it fails to account for every thing which some of its supporters pretended to deduce from it, neither has it any natural tendency to atheism, although adopted by a sect of philosophers, who fancied they could dispense in their systems with the intervention of a Deity.

"Nor do the original atomic theories appear to have been atheistical; on the contrary, the same philosophers who proposed this view of the subject considered matter, we are told, as wholly passive, and therefore admitted, as a necessary consequence, the existence of a moving principle which should be distinct from matter." (P. 4.)

We pass by the observations on the philosophy of Epicurus, because the extracts are made from Dr. Good's edition of Lucretius, which has already rendered the subject familiar, and the speculations of Boscovich, Leibnitz, Des Cartes, and Kant would require more space than we think they would deserve in our eclectic pages.

Mr. HIGGINS, of Pembroke College, seems to have had some notion of the prevalence of the atomic constitution of bodies; for, "in a work published by him in 1789, entitled 'A Comparative View of the Phlogistic and Anti-phlogistic Theories,' he distinctly states, that one ultimate particle of sulphur and one of oxygen constitute sulphurous acid, whilst one ultimate particle of sulphur and two of oxygen constitute sulphuric acid; and moreover that in the compounds of azote and oxygen the ingredients are to each other in the proportion of 1 to 1, 2, 3, 4, 5, respectively."

But even these views, crude as they were, forestalled the knowledge of the times; for chemical analysis had not then sufficiently advanced to allow his opinions to be either refuted or confirmed: nor was it until Dalton, in 1808, published the first volume of his "New System of Chemical Philosophy," that the subject assumed a determined form. He had, indeed, previously inculcated his principles in public lectures; and, in 1803, had communicated an outline of his speculations to the Manchester Society: still these were but faint shadows of his work.

With regard to the curious subject of *Isomorphous* and *isomeric* bodies, there are some very sensible though brief remarks.

"Professor Mitscherlich has rendered it probable, that several of the bodies belonging to the same group assume crystalline forms, which, if not absolutely identical, are at least nearly related one to the other; and from this it will follow, that, supposing such bodies to be severally united with an equal number of atoms of the same body, their figure ought still to correspond. Thus if we suppose sodium, potassium, calcium, iron, and manganese to agree in the shape of their ultimate particles, they ought, if combined with equal proportions of oxygen, to assume nearly the same crystalline arrangement. Under such a supposition, therefore, they would be called, in Professor Mitscherlich's phrase, *isomorphous* bodies.

"The same remark applies to the electro-negative division in an equal degree; thus the hyposulphurous acid, and the protoxide of azote, may be isomorphous bodies, although whether they are in fact so ought not to be taken for granted, without positive proof. The same may be the case with the sulphurous, the carbonic, the selenious, and the antimonious acids, and so with regard to all the other groups.

"Now it might be expected, that if any two electro-negative bodies, themselves isomorphous, and associated with an equal number of atoms of the same body, as of oxygen, be made to unite with the same base, the crystalline form of the resulting compounds should be related: for the number and form of the atoms of which they are respectively made up being analogous, it is probable that the aggregate arising out of them should be so likewise.

"Thus if lime and protoxide of iron are isomorphous, the carbonates of these bases ought to possess a similar crystalline form, and this Mitscherlich has shown to be the case.

"The same observation will apply to bodies belonging to the electro-positive class, when combined with the same acid; and the German chemist cites in his first memoir several examples of this kind, taken from the combinations of different bases with the sulphuric acid." (P. 73.)

And again:

"It is curious, that the crystalline form of arragonite corresponds as nearly to that of carbonate of lead and carbonate of strontian, as that of common carbonate of lime does to carbonate of iron; so that we may perhaps conclude, that lime is capable (like sulphur) of assuming two crystalline arrangements, the one of which may be isomorphous with the oxides of lead and strontian, the other with the oxide of iron.

"It must be confessed, however, that this is a subject upon which the immediate inferences from experiment seems to stand in direct opposition to all our preconceived opinions.

"At first sight, nothing would seem more obvious than that aggregates made up of the same number of atoms, agreeing in their primary properties, whether mechanical or chemical, shall produce the same substances; and this accordingly had been taken for granted in all discussions of the kind alluded to.

"Lately, however, various facts have come to light, which go to prove that bodies, which appear to possess precisely the same atomic constitution, may differ remarkably in their properties; nay, that they may even belong to a different class of substances altogether.

"Thus we have two distinct substances made up of carbon and hydrogen, in the proportion of 6 by weight of the former to 1 of the latter; the first a gaseous body, olefiant gas, the second a highly volatile liquid.

"Professor Berzelius, in a paper published in the Transactions of the Swedish Academy in 1830, has enumerated several other examples of the kind, distinguishing them by the name of *isomeric* bodies.

"The phosphoric acid is one of them; when exposed to a red heat for some time, it acquires new properties, coagulating albumen, and producing white instead of yellow precipitates with nitrate of silver.

"The tartaric acid is another case in point, Berzelius having discovered in certain kinds of tartar an acid differing in properties from, though agreeing in chemical constitution with, that more commonly known. The cyanous and fulminic acids are instances still more remarkable.

"Such are the principal examples of the kind taken from inorganic nature; but among organic bodies they would appear, from the researches of Dr. Prout, to be much more numerous.

"Thus the sugar from the cane, and from the urine of diabetic patients, agrees as nearly in point of composition with the sugar of milk, manna, and gum arabic, as the several varieties of cane-sugar do with each other; yet the first class of sugars yield oxalic, the second saclactic acid.

"Professor Stromeyer concludes, that this discrepancy arises from the dissimilar arrangement of the component atoms, and the different degrees of condensation they have undergone; but it appears to me more probable, that the presence of a portion of some principle, occasionally even too minute to be detected by analysis, may have occasioned the development of new properties. Dr. Prout is of opinion, that some foreign body, not of itself belonging to the animal or vegetable kingdoms, necessarily enters into the constitution of every substance capable of becoming assimilated, and constituting a part of any organic structure. Bodies containing this admixture he denominated *merorganized*, in order to express this supposed condition, implying that in passing into this state they become partly, or to a certain extent, organized.

"Now he accounts for the exceeding diversity of properties possessed by organic bodies, whose chemical composition is nearly identical, by the admixture of this small proportion of foreign matter, which by its presence infuses new properties into the mass, and prevents the particles from arranging themselves in their natural crystalline form.

"Thus starch is *merorganized* sugar, differing only from the latter by the presence of certain foreign matters, which effect a complete change in its characters.

"This curious view is rendered more intelligible by the important researches of Mr. Herschel, detailed in his Bakerian lecture for 1824; in which he has shown, that the relations of a mass of matter, such as mercury, to electricity, may be even reversed by the presence of an almost infinitesimal quantity of a substance, such as potassium, in an opposite electrical condition.

"'That such minute proportions of extraneous matter,' says Mr. Herschel, 'should be found capable of communicating sensible mechanical motions and properties of a definite character to the body they are mixed with, is perhaps one of the most extraordinary facts that has appeared in chemistry. When we see energies so intense exerted by the ordinary forms of matter, we may reasonably ask, what evidence we have for the imponderability of any of the powerful agents, to which so large a part of the activity of material bodies seems to belong.'" (P. 78.)

Upon this the author remarks:

"The views here promulgated promise to throw some light upon a subject in which I have long felt a lively interest, namely, the virtues of certain medicinal springs which contain but a very minute proportion of any solid ingredient. Much of their efficacy may doubtless be attributed to the influence of imagination, to change of scene and of habits, and in many cases to the transition from a dense and impure to a more clear and rarefied atmosphere. But, after all these deductions, there seems to be a residual phenomenon, to use a phrase of Mr. Herschel's, requiring a further explanation.

"Now it seems not improbable, that very minute portions of certain principles may act upon the system with an energy commensurate, not to their own quantity, but to the change their presence occasions in the properties of the more inert ingredients that accompany them.

"In this manner we may explain the powerfully tonic effects of certain springs containing a very minute impregnation of iron; the cures effected by waters, such as those of Loueche or Gastein, which appear to approach as nearly as possible to absolute purity; and the efficacy in glandular disorders attributed to certain others, in which a minute proportion of iodine or bromine has been detected.

"In a Memoir read before the Royal Society, on the saline and purgative springs of this country, in which I stated the proportions of iodine and bromine present in each, I expressed myself as being sceptical with regard to any medicinal agency that could be exerted by so small a quantity as one grain of iodine diffused through ten gallons of water, the largest quantity in which I had ever detected it. The considerations above stated now induce me to attach more importance to the circumstance of its presence, for it is just as possible, *à priori*, that this quantity of iodine should infuse new properties into the salts which accompany it, and cause them to act in a different manner upon the system, as that less than a millionth part of potassium should create so entire a change in the relations of a mass of mercury to electricity. Whether the waters of Cheltenham or Leamington affect the constitution differently from solutions of Glauber salt of similar strength, must be decided by the experience of those on the spot; but granting this to be the case, and there is not wanting testimony in favor of such an opinion, the discovery of these new principles in several of them may serve to explain their superiority.

"Dr. Prout has already hinted, in his Gulstonian lectures, at this solution, accounting in this manner for the fatal effects of inappreciable quantities of miasmata diffused through the atmosphere; nor is it unlikely that the system of the Homoiopathics in Germany may have grown out of some facts that had been observed, with respect to the powerful influence exerted on the system, when even very minute quantities of certain active principles were added to common medicaments." (P. 80.)

Who will say a word against infinitesimal doses after this?

In following out some of the applications of the theory of definite proportions, we observe that Dr. D. has brought some very curious circumstances together. Those respecting the classification of minerals are less striking than the botanical and astronomical examples; in the conclusion of the third chapter he says,

"It is possible, therefore, that at some future time a system of mineralogy, combining the advantages of a natural and an artificial method, may be proposed, which shall be based entirely on the atomic constitution of bodies, and the doctrine of isomorphism, which has proceeded from it, thus affording additional proof of the widely spreading influence of this discovery; yet even at present we need not this further step to convince us, that the law of definite proportions extends throughout the whole of inorganic matter.

"Neither do vegetable or animal products appear exempt from its influence, although a provision exists, according to the ingenious views of Dr. Prout, for preventing its interference with the operations of life; a minute portion of some foreign matter being superadded to every definite compound intended to be assimilated, which, either by the interposition of its particles, or perhaps in some other less intelligible way, counteracts the operation of that cohesive attraction, the tendency of which is to impart somewhat of a crystalline character to the mass.

"It would, doubtless, be unphilosophical to attribute to the selfsame law of nature, the proportion existing between the particles that compose a compound body, and the relation of number that has been traced amongst the parts of the floral organs in plants; yet it may not be without interest to notice, as a proof of the analogy which runs throughout the whole of creation, and as indicating, perhaps, that the law of definite proportions itself, widely spreading as it seems, is but one of the consequences of some more comprehensive principle, the conclusions which the most distinguished botanists of the present day have arrived at, as to what ought to be regarded as the primitive types of monocotyledonous, dicotyledonous, and acotyledonous plants; these constituting the three great classes into which the vegetable kingdom may be divided.

"Mons. Decandolle observes, 'that the numbers 4, 5, and their multiples, appear to belong peculiarly to dicotyledonous plants; the number 3, and its multiples, to monocotyledonous; the number 2, and its multiples, to be established among the acotyledonous in the great family of mosses.' That exceptions from this standard are numerous will be evident, when we recollect that the main principle on which the artificial arrangement of Linnæus proceeds, is founded on the difference of number in the floral organs; but those who will take the trouble of perusing the philosophical remarks of the botanist alluded to on this subject, will, I flatter myself, rise with the conviction that these deviations from the supposed standard may be explained by the interference of other causes, such as the abortion of certain parts, or the adhesion of two or more, so as to have the appearance of one; whilst the existence of the same tendency towards regularity may be traced even in these, by an occasional return to the ideal structure, whenever the causes which usually interfere with it are accidently removed.

"Mons. Decandolle has also shown that this numerical proportion exists between the members of the different organs that together constitute the same flower, as well as between the component parts of different flowers belonging to the same class.

"Thus the relation of number between the parts of the calyx and corolla is very remarkable, and the deviations from this regularity there are met with may be referred to the causes above assigned, being most frequent where the parts are most numerous, the chances of abortion or of adhesion being increased in proportion.

"The same relation extends likewise to the stamens, subject to occasional deviations; and even in the pistillary system, which presents the greatest anomalies in this respect, it may be observed, that the number of the valves of the pericarp, of the placenta, of pistillary chord, of the styles, and the stigmas, &c., is always in the proportion of 1 to 1, 1 to 2, 2 to 1; so that one of these organs may serve to determine the rest, allowing for exceptions from abortion, &c.; and that when the parts of the pistils are disposed in a whorl-shaped manner around an ideal or real axis, the number of their parts is in a determinate relation to that of the other parts of the flower, this relation being one of the following:

1 to 1.
1—2 or its multiples.
1—3 or ditto.
1—5 or ditto.
2—3 or ditto.
2—5 or its multiples.
3—5 or ditto.
4—5 or ditto.
2—1.

"Lastly, we learn from astronomers, that the members of the planetary system to which we belong, are themselves subject to a law of an analogous kind.

"Bode has observed, that the magnitudes of the several orbits which the planets describe bear a certain definite proportion one to the other, the distances of Mercury, Venus, the Earth, Mars, &c. from the sun being that of the numbers 4, 7, 10, 16, 28; so that the differences are as 3, 3, 6, 12. The law was interrupted between Mars and Jupiter, so as to induce him to consider a planet as wanting in that interval; a deficiency long afterwards supplied by the discovery of four new planets in that very interval, all of whose orbits conform in dimension to the law in question, within such moderate limits of error, as may be due to causes independent of those on which the law ultimately rests.*

"There cannot be a sublimer subject for contemplation, or one more calculated to elevate our ideas with respect to the Divine attributes, than the correspondence which may thus be traced between the laws that pervade the whole of creation, from the ultimate particles of matter, which, by their extreme minuteness, baffle our very powers of conception, to those immense aggregates of them, which compose any one of the members of our own planetary system; and as, according to the grand conception of Boscovich, the attraction of gravitation, and that of cohesion, may perhaps turn out to be the same force exerted at different distances, so the various ways in which, as we have seen, the tendency to definite proportions (if I may so express myself) manifests itself throughout the whole of nature, will perhaps be eventually traced to the same law; of which what is called the atomic theory, comprehensive as it may be, is only one of the consequences.

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* "In the third volume of the Cambridge Transactions, Mr. Challis has attempted to extend Bode's law of the distances of the planets from the sun, to the distances of the satellites from their respective primaries. He shows that the differences of the distances of Jupiter's satellites are very nearly in the ratio of 2½; those of Uranus in that of 1⅓; authorizing the conjecture that there are two undiscovered satellites between the 4th and 5th, and one between the 5th and 6th. In the case of Saturn's satellites, the ratio is further departed from, perhaps from the interference of the ring."

" It is this, indeed, which constitutes the most striking distinction between the effects of art and of nature, the provisions of finite and of infinite intelligence; the former accomplishing its purposes by a multitude of particular contrivances and regulations, which being made to meet each circumstance as it arises, are inconsistent one with the other, and at the best are applicable to a limited number only, out of the infinite variety of possible cases; the other producing an immense series of effects by a few very simple laws, which not only harmonize exactly one with the other, but are afterwards found to be themselves the consequences of a still smaller number of first principles." (P. 98.)

The fourth chapter, which contains matter equally curious with that shown to exist in the three foregoing, we shall leave untouched, for we have already exceeded our purposed bounds; and the reader of the volume would blame us were we to anticipate all the good that it contains.

BIBLIOGRAPHICAL NOTICES.

A Treatise on Indigestion and its Consequences, called Nervous and Bilious Complaints; with Observations on the Organic Diseases in which they sometimes terminate. By A. P. W. PHILIP, M.D., F.R.S. L. and E., &c. Seventh Edition.—8vo. pp. 231. Renshaw and Rush, London.

ELABORATE criticism, or a detailed analysis, of a work which bears upon its title-page the verdict which has been passed upon it by the profession, in the two words "Seventh Edition," would be quite supererogatory. In several numbers of this Journal we have given ample accounts of the previous editions of this work, and pointed out the strong claims it possesses to the attention of the student and practitioner. With every wish, therefore, to do all the justice in our power both to the author and the publisher, we confine ourselves to stating, in the words of the former, the additional advantages which will be secured by the purchase of this edition.

"In the present and sixth editions, which are much enlarged, compared with the former editions of this treatise, the more protracted cases of indigestion in particular, both with respect to their symptoms and treatment, are more fully considered. I have endeavoured to trace the causes which render them protracted; to lay down at greater length the plans of treatment which I have found most successful in them, and to ascertain the principles on which their success depends; and a chapter on Symptomatic Indigestion has been added, which is necessary in order to place in a clear point of view the nature of many, particularly of the more protracted cases. In enlarging the following treatise, I have adhered to the plan on which it was originally written, stating merely my own observations, and the reflections suggested by them, and that only when they have led to something which has not been stated or sufficiently explained by others."

Although we are perfectly aware of the great practical merit of some other works on the same subject, we still believe that he who does not peruse Dr. PHILIP's "Treatise on Indigestion" neither does justice to himself nor to the dyspeptic patients he may have to treat.

Principles of Physiological Medicine, in the form of Propositions; embracing Physiology, Pathology, and Therapeutics, with Commentaries on those relating to Pathology. By F. J. V. BROUSSAIS, M.D. &c. Translated from the French, by ISAAC HAYS, M.D., and R. EGLESFELD GRIFFITH, M.D., Members of the American Philosophical Society, &c.—Philadelphia: Carey and Lea. 8vo. pp. 594.

WE recommend this' work to the attention of those who are not sufficiently conversant with the French language to study the original. It is very true that Broussais frequently pushes his peculiar doctrines to an unjustifiable extent; and it is equally certain that he as often lays down propositions, with an assumption of originality, which no well-informed medical student of the present day would deny. Notwithstanding, however, M. Broussais' excessive vanity, which almost every page of his works betrays, he is both an amusing and an instructive writer. His doctrines, we are aware, are no longer so popular in France as they were when they were first promulgated, but they are still supported and acted upon by many very distinguished French practitioners. His opinions upon physiology and pathology are treated with respect even by those who refuse the unlimited belief which M. Broussais considers to be his due: they are frequently referred to by continental and English medical writers, and, for this reason alone, they cannot with propriety be neglected by the student or practitioner who wishes to keep upon a level with the medical literature of the day.

The American translation possesses the great advantage of having a very copious alphabetical index, by the assistance of which M. Broussais' opinions may be instantly referred to.

An Explanation of the Causes why Vaccination has sometimes failed to prevent Smallpox; and also a Description of a Method, confirmed by experience, of obviating such Causes. By Edward Leese, Member of the Royal College of Surgeons; Stationary Vaccinator in the National Vaccine Establishment, &c. Part Second.—8vo. pp. 36. London.

Mr. Leese has for many years held the appointment of stationary vaccinator in the National Vaccine Establishment, and must consequently have had sufficient opportunities of becoming well acquainted with every fact appertaining to the subject of vaccination. It is true, indeed, that the best opportunities are not always taken advantage of; the lessons which experience should teach us are too frequently slighted with schoolboy indifference, and neither add one single grain to the "intellectual granary" of the observer, nor enable him to afford one iota of improvement to others. Mr. Leese is not of this careless class: he has carefully attended to every circumstance relating to vaccination, and in the little *brochure* before us he gives, in a brief form, the conclusions he has drawn from the large share of experience he has had.

The "method" referred to in the titlepage is that which was brought into general notice by Mr. Bryce, of Edinburgh.

We doubt whether all Mr. Leese's opinions will be received as undisputed axioms, but the source from whence they proceed will at least secure for them respect and mature consideration. There is one point connected with vaccination, upon which we should be glad to receive information: we allude to the effects of temperature on the vesicle. As far as we know, Dr. Howison, vaccinator to the Royal Dispensary at Edinburgh, is the only person who has recorded his opinion upon this subject: he says, "From long experience, I am inclined to think that temperature, or weather, affects, to a considerable extent, the perfection of the vaccine vesicle. I have always observed that the vesicle is more complete, and more certain of going through its various stages, during the summer months, and particularly during warm seasons, when it is turgid with pellucid veins, than during the winter, when the weather is cold and tempestuous; at which period the vesicle is small, imperfect, and flaccid."*

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* Medical Gazette, vol. viii. p. 520. Mr. Leese himself informs us that he is convinced, from his own observation, of the truth of Dr. Howison's remarks. —Rev.

REPORTS
FROM HOSPITALS AND MEDICAL INSTITUTIONS.

Case of Placental Separation; fatal Hemorrhage. By JOHN FOOTE, jun., Esq., L.A.S., A.M.B.S.

ON Tuesday, the 26th of February, 1833, I was invited by Mr. GERARD DAVIS, a surgeon residing in Great Chapel street, Westminster, to accompany him to witness the autopsy of a woman, who had died undelivered. Messrs. DAVIS, D. O. EDWARDS, G. PEARSE, and GIBBON, were present, as likewise the midwife who had been in attendance. The history of the case, as far as could be gleaned from the friends and the accoucheuse, was as follows:

Margaret Morris, ætat. thirty-five, a widow, but kept by an Irishman of the name of Welsh, residing 5, New Way, Westminster, obtained a card from a charity on which the addresses of two midwives were inscribed; she expected to be put to bed about the middle of March in the present year. She was the mother of six children, of which four are living; labours hitherto natural. She had a stand in the Broadway, where she was accustomed to sell fruit, supporting her basket by a band across the loins; owing to the vigilance of the new police force, she had latterly been obliged to keep moving about with her burden. Like the generality of those of her class, her habits were very intemperate.

After conception, she was admitted into the Westminster Hospital for abdominal dropsy, and, while there, she considered herself to have quickened.

On Saturday, the 23d instant, when about eight months and a half gone, she carried very heavy loads of coals and potatoes, and also drank a very large quantity of spirits. Within a few hours afterwards, she was taken ill, and lay down on the bed. On the Sunday afternoon, flooding came on to such an extent that the blood soaked through the bedding, and deluged the floor. She also suffered from severe and unremitting pain in the left side of the abdomen, but unaccompanied by true labour pains. The first midwife on the list was immediately sent for; but, ere she arrived, (four o'clock,) the hemorrhage had ceased, and the marks of it on the floor had been effaced. She was, however, informed of that circumstance. She made an examination, and found the os uteri undilated (as she said), so that she could not ascertain the nature of the presentation. She merely ordered her to take some hot tea, and hot brandy and water, and left her. The flooding occurred again very severely in about two hours, there being constant draining in the interim; the midwife was sent for a second time, but, when she came, the woman was insensible and evidently sinking. The man, Welsh, was immediately dispatched for the parish-doctor, but, as that gentleman was not in the way, he went for another surgeon, and when he got there, he found that the woman had been dead a quarter of an hour. She expired at a quarter past eight in the evening, all external hemorrhage having ceased by seven. During the whole time, there were not any labour pains.

AUTOPSY. *External appearances.* Body generally pale; countenance much blanched; features calm; abdomen prominent, presenting an even sensation to the hand; a blood stain on the left thigh.

Internal. An incision being made from the umbilicus to within three inches of the pubis, and then caused to diverge to either side, as far as the anterior superior spine of the ilium, some serous fluid was evacuated, and the uterus came fully into view. Its parietes were then cautiously incised, and the membranes, containing the liquor amnii in considerable quantity, exposed. These latter had not been ruptured, either by nature or by art; they were adherent throughout nearly their whole extent to the internal surface of the uterus, which was also considerably phlogosed. On the left side of the uterine cavity, a dark coagulum of blood, weighing between two and three pounds, was discovered, lying between the matrix and a thin flattened placenta, as large as an ordinary plate. The after-burden was nearly entirely separated from the uterus; the membranes being slit open, the os tincæ was ascertained to be dilated to the size of half a crown, and the head of the fœtus, a male, to have descended into the cavity of the pelvis, the vertex presenting, but not far enough to fill up the hollow of the sacrum. There was not any rupture either of the womb or umbilical chord; and the uterine veins, some of which were traced to a considerable extent, were healthy. The pelvic bones of the mother appeared to be well-formed, and sufficiently capacious to allow an infant of the ordinary size to pass. There was not any undue enlargement of any part of the fœtus, which might obstruct the natural termination of parturition. The liver presented the usual appearances of that of the drunkard. The other cavities were not examined.

There can hardly be a doubt in the minds of any one that this woman lost her life from gross mismanagement and ignorance on the part of the midwife; and neither should I hesitate in affirming, that, had a properly educated practitioner been in attendance, she would not have perished. As she had previously borne six children, her labours hitherto natural, as there was not any deformity either of the mother or child, and the presentation natural, it may be reasonably surmised that had she been properly treated, labour would have come on, the hemorrhage would have been arrested, and the mother saved, although the child, in all probability, would have been lost. An obstetric pupil of only a year's standing ought, and I doubt not would, have treated the case better: he would have dilated the os uteri, ruptured the membranes, and induced labour. The mere ruptures of the membranes might have sufficed to prevent the recurrence of hemorrhage, and the case might then have been left to the efforts of nature, or else labour expedited by the secale cornutum. If it be urged, that the symptoms present when the midwife came the first time did not warrant manual interference, it must be admitted that the woman ought not to have been left after the occurrence of so formidable an attack of flooding, especially as there was constant draining, inasmuch as it was very liable to recur, and cause syncope and death. But it must be apparent, that, in the case before us, it was the duty of the midwife to have ascertained the nature of the presentation by dilating the os uteri sufficiently, as it might arise from a placenta presentation, and then active measures are imperatively necessary. It does not appear, from what I have heard both from the midwife and other persons, that any thing was done for the woman's relief, except the exhibition of tea and brandy and water in the first instance, and sending for a medical man when she was in articulo mortis; so that the midwife's conduct was reprehensible throughout. Had a coroner's inquest been held, can a doubt be entertained as to the nature of the verdict?

Cases similar in the result are not of unfrequent occurrence in the hands of midwives, a race of beings frequently extremely ignorant, and only capable of managing a case successfully when nature does the business to their hands. Some, however, have sufficient common sense to induce them to send for other advice, and for an individual more competent to conduct the case, when it becomes too onerous for them, and they are anxious to get rid of the responsibility; but here, as in many others, the assistance of a surgeon was not required until the time had passed when he might have been of service. For these reasons, and others which might be adduced, the sooner the midwife is prevented practising, the better it will be for science and the public weal, notwithstanding the reveries of a worthy but eccentric knight, who, although a good surgeon, is most certainly practically unacquainted with obstetricy. To my knowledge, there are lecturers on midwifery who do not hesitate to teach women in private the art and science they profess, while they rave at and run down Sir A. CARLISLE for his whim-whams in public: such conduct alone is sufficient to stamp the persons I allude to with disgrace, and they richly merit to be held out for public contempt; but it is an ungracious task to point out the errors of our brethren, and I decline it.

36, Tavistock street, Covent Garden.

UNIVERSITY HOSPITAL OF CLINICAL AND OPHTHALMIC SURGERY, BERLIN.

[FROM A CORRESPONDENT.]

Aneurism by Anastomosis of the Temporal Artery.

THIS form of aneurismal tumor has not been hitherto sufficiently attended to by the greater number of pathologists, although it is not rare in its occurrence. It happens particularly when an artery divides itself into a great number of branches within a short space.

I have observed it most frequently in the branches of the occipital and temporal arteries. In every case, the disease had arisen in very young subjects, which leads one to suppose that they were usually caused by "vitium primæ formationis." In the commencement the disease is manifested by many parts near one another being affected by sensibly strong pulsations, which, upon close examination, manifestly correspond to the course of the branches of an artery. When the disease progresses further, it changes its original form. There arises, on the more strongly pulsating points, knotty swellings, which approach more or less to each other, and, according to the degree of their extension, form variously sized and irregular tumors, until, from further extensions, it at length forms a cluster-like swelling.

These aneurisms are accompanied with many difficulties and dangers, when they have been allowed to increase uninterruptedly, which especially appertain to the disease in question.

With respect to the curative means, I have since many years experienced that the ligature of the trunk of the affected arteries was frequently insufficient to the attainment of the proposed effect, particularly when this disease affects the branches of the temporal and occipital, owing to the free anastomosis of the frontal, temporal, and occipital branches with each other, and with those of the opposite side, supplying the aneurism with the quantity of blood which was intercepted by the ligature of the trunks.

Another circumstance also causes the ligature of the principal artery to be unsuccessful, that many of those small tumors have acquired such a degree of self-existence (*selbständiges lebens*), that the adhesive inflammation consequent on the operation is not sufficient to cause the obliteration of those tumors. More certain results from this method are only to be obtained by applying ligatures on not only one trunk, but upon all those which supply the aneurism with nourishment; an operation which would be extremely painful, and might be dangerous, from the violent inflammation of the scalp.

I have, instead of this operation of tying the trunk, adopted another method, in every aneurism of this kind where pressure could be exercised upon an immediate long surface, and always with the best success; which consists in making a deep incision of tolerable length in the middle of the aneurismal swelling, particularly in that part where the tumors pulsate most strongly, are most numerous and projecting, and in that direction which cuts through, in the one incision, the greater number of those tumors; the operator must instantly arrest the violent hemorrhage in the manner hereafter described. Both steps of this operation are much less painful than the tying of the principal artery or arteries, where such careful dissection is necessary, &c. This method preferred by me is much more certain in its results, inasmuch as it is performed upon the affected part, and thereby causes the adhesive inflammation to be much more perfect; further, it renders unnecessary all secondary operations, and, under ordinary circumstances, the cure is effected commonly in the short space of some weeks.

The history of the case which has given rise to the preceding observations, and which was witnessed by VON WALTHER and other foreign physicians, is as follows:

A boy, aged ten, of a scrofulous habit, suffered a good deal during the last four years (probably from his birth,) from painful throbbings in the right temporal region. On examination, I found there an elastic and very unequal swelling projecting somewhat more than an inch, and towards the circumference rather firmer; the only tumor which pulsated strongly ceased to do so on firm pressure, which caused pain, but whereby the bones could be plainly felt, and the parts reacquired their normal condition; the point of the tumor occupied the middle of the parietal bone, from which point it extended itself on all sides in a circle whose diameter was at least four inches.

From this tumor the head had the appearance as if the right half were larger than the left. When the hair was removed, the patient fixed, and the apparatus for arresting the hemorrhage was ready, I made an incision in the tumor from before backwards, three inches long, by which the greater number and largest of the aneurismal tumors were cut across. A quantity of arterial blood was lost; but immediately a soft sponge, extending beyond the edges of the tumor, was firmly pressed, and the pressure was continued some seconds with undiminished vigour, so that the lips of the wound and contiguous parts were emptied of blood as much as possible. Whilst the operator had one hand engaged by exercising pressure on the sponge, he seized with the other a tolerably large compress, removed the sponge, and at the same moment applied the compress, before hemorrhage could again occur, between the lips of the wound, and then covered the whole tumor with a sponge extending beyond its edges, of about one inch thick, which was made fast by means of adhesive straps and a bandage. After some hours I diminished the pressure which at first was necessary, by undoing some of the folds of the bandage.

On the second day the sponge was replaced by compresses, in order not to cause either too much pain or inflammation by immoderate pressure. Very slight antiphlogistic measures were necessary to subdue some pain and fever consequent on the inflammation.

On the seventh day, the compresses were separated by a copious suppuration, and the wound soon healed, its edges being brought together by adhesive straps. No secondary hemorrhage took place. There was not the slightest trace of pulsation in the circumference of the tumor, and the pain and swelling had entirely disappeared.

COLLECTANEA.

Floriferis ut apes in saltibus omnia libant,
Omnia nos, itidem, depascimur aurea dicta.

PATHOLOGY.

Paralysis. From Dr. Root's Clinical Lecture. [*Med. and Surg. Journal.*]

I wish next to draw your attention to a case of paralysis from torpor of the nerves, apparently arising from cold. It occurred in Phœbe Munson, aged fifty, a washerwoman, who was admitted into Mary's Ward, November 1. She stated she had not been in good health for the last two years, having found, ever since that period, a gradual diminution of sensation and motion in the upper and lower extremities. Her occupation of course exposed her to cold, and, about six months ago, the loss of power and sensation had so much increased as to prevent her from any longer following it. When admitted she was very low spirited, had so little use of her arms as scarcely to be able to feed herself, and could only walk with the assistance of a person on each side of her, dragging her legs along the floor; both the upper and lower extremities were very cold, and she complained of a constant sensation of general coldness and weakness. The sensibility of the lower extremities was so much impaired that I pinched the foot, instep, and calf of the leg pretty severely, while talking to her, without her expressing the slightest consciousness: this was more particularly the case with the right leg; she had rather more feeling in the left. In the upper extremities, sensation was not quite so much impaired; but she was incapable of holding any thing in her hands more than a few seconds, and her grasp was exceedingly feeble. She complained of continual aching pains across the loins, occasional giddiness of the head, and dimness of vision; her tongue was white and tremulous, appetite tolerable, bowels very costive, pulse eighty, small, and compressible. Now, although she complained of this aching pain of the loins, with occasional giddiness and diminished vision, still, as I found, on examining the spine by percussion, that there was no reason to suspect inflammation or congestion of the spinal cord, that there was no heat of the head, and that the pupils dilated and contracted perfectly naturally, I was satisfied that the paralysis was dependent on a torpid state of the nerves, (probably from cold,) and determined to treat it as such.

I believe it is now pretty generally admitted, that cold is capable of producing this torpid condition of the nerves, inducing, either locally or generally, loss of voluntary power, as well as diminished sensibility. There is a curious example of this related by Dr. Clark, in the fourth volume of the Edinburgh Med. and Surg. Journal. Dr. Powell, too, published some cases of palsy, arising from this cause, in the fifth volume of the Transactions of the College of Physicians.

The indication there being to stimulate and excite the nervous system, I applied a blister to the nape of the neck, and ordered her the sixth of a grain of strychnia three times a day; and, to obviate the costiveness, gave her ten grains of the compound extract of colocynth every night; allowing her at first the house diet, viz. meat four times a week, and soon afterwards letting her have meat daily, with a pint of porter. This treatment was continued during a greater portion of the time she remained in the hospital, the dose of the strychnia being gradually increased or diminished according to the degree of its effect. At one period, about the tenth day after she commenced it, she took half a grain three times a day, but she could not take this quantity long: the second day after taking this dose, it appeared suddenly to affect her head with giddiness, and to deprive her of all power over her limbs; but, on being put to bed, this soon subsided, and on the following day she had much more power over the voluntary muscles than she had possessed since she was admitted: indeed, on the fourth day from the commencement of her taking the strychnia, the sensibility and motive power had considerably increased; in less than a fortnight, sensation was perfectly restored, and, by the expiration of the month, she was able to walk firmly and without any support, taking each leg fairly off the ground. Ultimately, before she quitted the hospital, she was able to walk, to use her own words, "as well as ever she did in her life."

The power of the upper extremities was more slowly regained, and although it began to increase as early as that of the lower, still it was not in proportion; and, therefore, about the sixth week, I directed electric sparks to be drawn from the arms and shoulders, at the same time that she was still taking the strychnine. By degrees the power of the hands and arms returned, so that she could grasp firmly, and maintain it for a considerable time, and, when she quitted the hospital, she was quite sufficiently recovered to earn her bread. She was a woman of desponding state of mind, and would often tell me she was quite incapable of using her hands, even at the time she admitted she fed herself, laced her own stays, tied all her tapes herself, and, in fact, dressed herself entirely: so, of course, as all of you know, when a person is capable of doing this, she must have free motion and use of her arms. Last Thursday, then, she went out quite well.

You will see, by the case-book, that when she had taken the strychnine about six weeks, some of the powdered valerian root was ordered for her, with a drachm of the ammoniated tincture in the camphor mixture: this was merely given her in consequence of the general feeling of coldness she still complained of. At the same time, you must not suppose I expected any great good from the valerian; the ammonia, as a stimulant, might increase the temperature of the body; the valerian, too, is unquestionably a stimulant, in consequence of the essential oil it contains, but it is contained in too small a quantity to admit of the dose in which she took it acting as such. I confess that I gave it to her with the intention of making a strong impression upon her mind, through the medium of her olfactory nerves, for, as I said before, she suffered great depression of spirits; and I believe the beneficial effects of this, as well as of most of the fœtid medicines, are to be attributed to the strong impression they make upon the mind. Afterwards, on leaving off the strychnine, when merely debility with coldness remained, I gave her some of the ammoniated tincture of iron; began first with a drachm, soon increased it to a drachm and a half, afterwards to two drachms, and then to two drachms and a half. This medicine I have always found a very excellent stimulant and tonic, and in this case it fully answered the purpose I intended. She soon now recovered her strength, the temperature of her body became natural, and she appeared to get quite fat. It is in these kind of cases, arising from cold, that strychnine is useful; but if the paralysis arises from any pressure, or effusion, no benefit can be expected from it; or, if it should arise from inflammation or congestion, it can do no good; but, in cases similar to the one I have mentioned, from its powerful stimulating effects on the nerves, it is often useful. I have found it also beneficial in cases of paralysis arising from another cause, viz. from lead. I have a case, at the present time, in the hospital, where I can clearly trace the cause to this poison; I have given him the strychnia, and under it he is decidedly improving. I have also another case in the hospital of palsy of the wrists and fingers, but where I cannot trace the cause to the poison of lead; and therefore, as there appears to be no disease of the brain or spinal cord, I am giving him also the strychnia, and from which he is certainly deriving benefit. You know that the peculiar effect of this remedy is the production of a sensation of either pricking or involuntary contraction of the muscles, and I do not think that it is of any service in paralysis, unless one or other of these effects is produced. This, however, is not necessarily its first effect, for those gentlemen who are in the habit of going round with me will, I dare say, recollect, that many patients taking this medicine have complained of pain in the head, vertigo, and dimness of sight, and sometimes even to such an extent, that they have fallen down in a state of insensibility, without having been previously affected by any pricking or twitching of the muscles. I mention this, because Orfila and Magendie have asserted that it acts upon the spinal cord alone; the latter, indeed, has stated, that in experimenting on animals, if he divided the spinal cord at the occiput and removed it, that then the strychnia was incapable of producing any effects; but that if he left the spinal cord entire, and then removed the brain, its specific effects were produced. I am, however, satisfied, that some affection of the brain is quite as frequently produced as the tetanic affection of the muscles. It is commonly said, too, that the muscles of the paralysed limbs are chiefly affected by these convulsions, nay, that in many cases they alone are affected, the muscles of the healthy limb remaining quiet, while the paralysed limb is also said to have diaphoresis produced without the other participating. I cannot say I have found either of these to be the case. The muscles of the healthy side have been quite as much affected as those of the diseased, and when diaphoresis has been produced, I have not observed that it has been partial. Notwithstanding this, I have often seen it produce the convulsive twitching of the muscles, without the head being at all affected.

With regard to the dose of strychnia, many begin with not more than a tenth or twelfth of a grain: I rarely commence with a less dose, to an adult, than the sixth of a grain, either of the pure strychnia or of the sulphate; and, if there be no affection of the head, no pricking or twitching of the muscles, gradually increase it to a fifth, fourth, third, half, and in some instances a grain, three and four times a day. I have never exceeded a grain for a dose: it required always to be given with caution, and to be watched. Where the dose is not increased, it appears to me to accumulate sometimes in the system; for I have known two or three instances of patients taking the same dose for two or three days without its producing the slightest apparent effect, and who have suddenly been attacked with violent twitching of the muscles, and who have fallen down in a state of insensibility. To a child, the dose I should commence with would be, at most, the twelfth of a grain, which should be very gradually increased until some such effects are produced as I have named.

PRACTICAL MEDICINE.

Convulsive Disease in Children. Contraçtion may be either symptomatic or essential. In the first case, it is connected with an inflammation of the brain or spinal marrow, or their envelopes. It presents itself in the course of fevers, whether these be continued or intermittent. At the period when the two preceding cases were observed, there was an infant in the wards affected with meningo-encephalitis, which presented a permanent contraction of the left arm. M. Guersent has seen a case of a young girl, in whom there was a contraction of both arms, arising from a cerebral congestion connected with deranged menstruation. Rigid spasms of the muscles frequently show themselves in hysteria.

Essential contractions, on the contrary, appear independently of all organic lesion. They are superficial or deep. It is only to these last that the term of tetanus should be exclusively applied. These cases are attended with severe symptoms, a greater or less derangement or difficulty in deglutition, respiration, circulation of the secretions, indicating an alteration in the pharynx, heart, stomach, &c. the muscular fibres of which are the seats of tonic spasms analogous to those observed in superficial muscles. From all this it may be easily conceived how symptomatic trismus occasioned by a slight wound may cause death in less than twenty-four hours.

Superficial contractions are never accompanied with any notable derangement of the functions of digestion, respiration, and circulation. Respiration is interrupted only when the muscles concerned in this function are themselves affected. Superficial contractions are sometimes general, sometimes local. Among these last, we ought to range torticolis, cramps, tonic spasms of the muscles of the sides, &c.

Under the name of torticolis, very different diseases have been described. This affection is characterized by a permanent rigidity of one or more muscles of the neck, with an inclination of the head and an absolute impossibility of turning it. The muscles affected, the length and thickness of which diminish at the same time that they become harder, form inflexible chords beneath the teguments which prevent the head from resuming its proper position. This affection most commonly arises from the impression of cold upon the neck. Sometimes it only remains twelve, twenty-four, or forty-eighty hours; at others it assumes a chronic form. It should be distinguished from rheumatism, in which motion, though not impossible, is difficult and attended with pain. It ought not to be confounded with articular inflammation of the first cervical vertebra, which occasions analogous symptoms.

Cramp is a contraction of the muscles of the legs and arms, and principally those of the calf. The tension of these organs takes place without any evident shortening, being attended with pain more or less acute. It is produced by the most opposite causes, lasts sometimes a few minutes, whilst at others it is protracted to eight or ten days, and even during whole months. M. Guersent has seen cases of it in children. The pain is in an inverse ratio to the duration of the disease. Very acute at first, it diminishes as the disease assumes the chronic form. M. Guersent has observed contractions of the muscles of the leg in two children of the ages of ten and twelve years, which continued for two years. One of these was attacked with croup during the continuance of the disease, and died. The autopsy was made with the greatest care, but no appreciable alteration was observed either in the brain or spinal marrow. The nerves, carefully dissected, exhibited nothing unnatural. But the muscles were in a state of hypertrophia, their pale tissue being filled with a considerable quantity of fat.

The subject of tonic spasm of the muscles of the flanks, with corresponding shortening of the parts, has given rise to an interesting treatise published by M. Thibert, which contains many cases observed in the hospital "des Enfans." Beclard has noted one case in his civil practice. A child, seven or eight years old, was suddenly seized with lameness, attended with shortening of the right inferior extremity. An intelligent surgeon having been called in, had leeches and blisters applied, believing the case an affection of the coxo-femoral articulation. Beclard recognised a tonic spasm of the muscles of the right flank, prescribed a suitable treatment, and the child completely recovered.

Sometimes the muscular contractions of the members affecting a great many parts, are in some degree general. Almost all the muscles of volition are liable to spasm, as was seen in the patient which formed the subject of the first case. In this instance there was immobility and stiffness of the trunk and members, as though the body was composed altogether of hard and solid parts. This contraction, although it affects a great number of parts, does not, so long as it is confined to the spinal nerves, endanger the life of the patient; but it becomes much more serious when it extends to the encephalon and ganglionic nerves, as in traumatic tetanus.

The seat and nature of this disease are altogether obscure. It does not, it is true, always terminate in death, but when it does so terminate, dissections afford no light. M. Guersent has always found the brain, spinal marrow, and nerves free from any alteration. There is nevertheless a modification of innervation, and consequently an alteration of the nerves which are the agents of this, but such alteration is not appreciable with our means of investigation. Particular cases, where the muscular tissue offers an alteration from nutrition, are to be excepted.

The etiology of essential contractions is quite obscure. These manifest themselves most frequently in weakly and puny children, and in such as are addicted to vicious habits, nervous irritations, or convulsions. Among the occasional causes, exposure to cold whilst the body is perspiring, may be enumerated as one of the most powerful. It is well known that the rigidity of the sterno-mastoid muscles is usually produced by a draught or *coup d'air*, as it is commonly called. Lastly, the presence of worms in the intestinal tube and traumatic lesions, are regarded as causes of convulsions. Most of the causes seem to have been united in the case first cited.

Treatment of Essential Contractions. If an individual of a sanguineous, vigorous habit, be suddenly seized with contractions, we should not hesitate to resort to one or two general bleedings. Sauvages gives the case of a gardener, who having entered into a pit whilst his body was covered with perspiration, was suddenly seized with a general contraction. He was at first treated for an acute pleurisy, and afterwards took diaphoretics and narcotics. He recovered in seven days. With very young, weakly, and puny children, warm baths, vapour baths, frictions with the oil of sweet almonds, or with a liniment containing laudanum, are usually resorted to. M. Guersent thinks that opium ought not to be administered internally to children affected with contractions, except where its external use in the form of frictions is unsuccessful. Its internal use is not, however, so dangerous as has been commonly supposed.

We have seen it produce wonderful effects in some cases, and infants have occasionally taken enormous doses without showing any symptoms of congestion, the relief taking place on the first manifestion of the narcotic operation. Moisture of the skin is in general one of the most favorable signs, and this has led to the employment of diaphoretics, such as infusions of borage, the acetate of ammonia, &c. Dry frictions to the skin, vapour baths, bags filled with warm ashes, all contribute to the same effect. Purgatives should be resorted to for the purpose of keeping the bowels open. Dr. Hamilton has recommended their use, and quoted cases showing their efficacy. Some English physicians have spoken of great advantages derived from the employment of the subcarbonate of iron, the doses of which they have carried to an enormous extent, (half an ounce daily.) It was administered unsuccessfully to the patient mentioned in the second case.

Contrivances to produce extension have been tried, and have succeeded in some instances where their employment has been seconded by the assistance of baths, emollients, &c. Extreme measures have sometimes been resorted to in some cases, such as the section of the muscles, but as this painful means was not successful, it has been entirely renounced.

For the purpose of procuring the introduction of fluids into the mouths of newly-born infants affected with trismus, it is useless and even dangerous to introduce the gum elastic cannula through the nares, it being sufficient to hold the infant in a lying position with its head strongly drawn backwards, and then introduce a teaspoon between the dental arches and the sides of the cheeks. In addition to this, baths, diaphoretics, and gentle laxatives, if constipation exist, should also be tried.—*American Journal of Med. Sciences.*

Case of Spasm and Severe Pain relieved by Ligature. Reported by J. K. Mitchell, m.d.—E. A., a female, aged seventeen, of good constitution and regular habits, resident in Sixth below Spruce, was attacked in the afternoon of the 15th of July, 1832, with slight cramp in the lower extremities, affecting chiefly the calves of the legs. The cramps increased in force as the day advanced, and in the evening a profuse alvine evacuation, of a very liquid character, was followed by nausea and pain in the abdomen. After going to bed, she vomited copiously for about half an hour, frothy, yellowish, flocculent matter of a bitter taste. At eleven p.m. the pain in the abdomen became very severe, and the intervals between the spasmodic attacks very short. The family administered laudanum freely, applied injections, sinapisms, heat, and castor oil, without effect, and finally at half-past twelve a.m. of the 16th, sent for me.

I found her hands and feet cold and clammy, her pulse nearly natural, her countenance irregularly coloured, or flushed in ill-defined spots. Incessant motion and mournful cries expressed the severity of her pain. No evacuation of any kind had occurred after eleven o'clock, nor had there been any cessation of pain.

Bled her thirty-six ounces, administered laudanum and castor oil, ordered enemata, sinapisms, and dry heat with frictions. At half-past one, no abatement of symptoms. Applied a tourniquet round the middle of the forearm so tightly as to demand nearly all my strength in turning the key. An immediate removal of pain and nausea ensued; the patient lost the irregular flush, the extremities became warmer, and every morbid symptom disappeared. To try the effect, the tourniquet was loosened, and the pain immediately recurred. It was then kept tight for an hour, when it was relaxed without inconvenience. Soon after I left the patient, the pain and nausea returned, and the nurse endeavoured in vain to check them by the tourniquet. At half-past five A.M. I found the case as at eleven P.M., and, on tightening the tourniquet, which was badly screwed up, I again succeeded in suppressing the symptoms. At this visit I sent for my late pupil, Dr. Smiley, and after relaxing and tightening it, the tourniquet demonstrated the perfect control in which the pain and nausea were held.

Ordered a pill of Ol. Croton, gtt. j., Tart. Emet. gr. $\frac{1}{8}$th, Calomel, gr. ij., Rhei Pulv. grs. iv., to be repeated every hour until effective. At ten A.M. found that five pills had been taken, and an alvine evacuation of black fetid matter, of the consistency of tar, had been passed.

At twelve o'clock Dr. T. Harris saw the case with me. At this visit the nausea returning, it was instantly checked by tightening the tourniquet.

Once in the course of the day the pain returned slightly, and the vomiting recurred twice. In every instance the symptoms were removed by the tourniquet.

17th, four P. M. The case is apparently convalescent.

Remarks. The remarkable effect of the tourniquet in so severe a case, where ordinary measures for cure, vigorously applied, totally failed to abate a single symptom or to allay a single pang, renders this remedy worthy of further trial. Hitherto experiments with it have not been made extensively enough to fix its relative value. The objections of the patient have commonly prevailed upon the physician from making it tight enough, and the practitioner has been deterred by the dread of sphacelation. Neither should be regarded, because the patient approves when he observes the beneficial result, and the circulation cannot be entirely checked in the interosseous vessels of the forearm. The beneficial effect is only complete when the hand is brought to a close resemblance to that of a patient under cholera asphyxia.

In the present case the tourniquet remained tight for four successive hours without the slightest subsequent disadvantage. In cases of great severity, the screw should be turned until the good effect is obtained, for it is almost certain to follow an adequate application.

This remedy, originally Japanese, travelled through China to the Russians, and was brought with the cholera into Europe, where it was occasionally approved in practice.

It is to be observed that, for a cure, ordinary medical means must be employed, for the tourniquet only holds pain and spasm in temporary check.—*Ibid.*

Two Cases of Accidents, from Admission of Air into the Veins during Surgical Operations. By John C. Warren, m.d. Professor of Anatomy and Surgery in Harvard University. Some professional men have expressed doubts as to the accidental admission of air into the veins during surgical operations. Such doubts appeared well founded when the occurrence first attracted the attention of surgeons; especially on considering that veins about the neck were so very often wounded in the removal of tumors; and that some of them, as the external jugular, are frequently opened for the purpose of taking blood, without any unfavorable consequences.

Not long since I had evidence of the existence of such cases in two of my own patients, within no great distance of time from each other.

Case I. Mr. William Burrill, of Salem, aged sixty, was admitted into the Massachusetts General Hospital, on the 16th October, 1830. He had a cancerous affection of the left side of the face and neck, of the extent of three or four inches diameter. It was hard at the edges, of a livid red colour, ulcerated in the centre, very offensive, very painful, and had made an impression on the general health. The parotid gland, the submaxillary, the sublingual, and all the textures excepting the bone, were involved in the complaint. The lower jaw itself was thought to be diseased at first, but it afterwards appeared that it was not so. In so bad a state of things, I felt very little hope of being able to eradicate the disease, and would not have attempted any operation, had not the patient solicited it.

Considering the extent of the disease, that important bloodvessels would be divided, namely, the facial and sublingual arteries, probably the temporal, and even the external carotid, I thought it best to begin by securing the carotid trunk. An incision for this purpose was begun opposite the thyroid cartilage, and carried two inches downwards. The platysma muscle was divided; the edge of the mastoid exposed and dissected. Thus far, only a few drops of blood were discharged. The face of the sheath of the great vessels was a little uncovered, when a small effusion of venous blood appeared under the knife, and checked the operation. At that instant a very distinct sound was heard, like the passage of air through water. A few bubbles were seen in the venous blood, the flow of which was immediately arrested by applying a finger on the part. The patient exclaimed, "I am faint." On regarding his countenance, it was not pale, but livid, almost black, and the muscles agitated by a convulsive motion. The respiration became deep, laboured, and stertorous, like that of apoplexy. Committing the impression of the vein to Dr. Haward, who assisted me, I examined the pulse at the wrist, found it distinct, but very slow. The wound not bleeding, and very little blood having been lost, I directly opened the temporal artery, and the blood poured from it with great freedom. As it flowed, the respiration became more frequent and less laborious; the pulse at the wrist more natural. The leaden colour in the cheeks assumed a reddish tinge; and the alarming character of the symptoms was evidently diminished. About twenty minutes elapsed during these changes. At the end of half an hour I judged it safe to remove the patient to his bed, where he lay in a state of insensibility for two hours; at the expiration of which he awaked as from sleep, still breathing like an apoplectic. The night was passed without any accident, and on the following morning he was as well as usual, with the exception of a moderate soreness over the thorax, and a headach.

In seven days after the accident described above, the operation was performed without tying the carotid artery.

The diseased parts were included in an elliptical incision, extended from the lobe of the ear to the upper part of the neck, and including the submaxillary, the sublingual, and parotid glands, all of them in a morbid and disorganized state. The os maxillare inferius was not diseased. The hemorrhage was copious: but readily arrested, with the exception of that from a large vein, which, from its depth under the jaw, could not be distinguished so as to admit the application of a ligature, and was therefore compressed by a sponge. The veins below the wound were compressed by Dr. Hayward during this operation. The patient experienced a slight faintness, which soon passed off. He had no bad symptoms, and on the 10th of December, the wound being nearly healed, he requested his discharge; which was granted.

Case II. Nancy Bunker, of Trenton, in Maine, married, her age thirty-three. Three years since, she noticed a hardness in the right breast, which increased till it involved the whole gland in a tumor, very hard, moveable, yet obviously connected with the pectoral muscle by a morbid adhesion. The nipple is drawn in. The axilla is occupied by a considerable tumor, of a globular form, and quite hard. The disease has been accompanied, during the last year, with very constant lancinating pains. The patient is desirous of an operation; has a strong conviction that she shall not recover, yet is perfectly tranquil and resigned.

Operation. The patient sat in a chair. The right arm was extended, raised above a horizontal line, in order to give tension to the skin, and permit access to the armpit, and was supported in this position by an assistant. The skin on the surface of the breast, with the diseased nipple, were included in an oval incision; the breast was dissected from the pectoral muscle, and left connected with the axillary glands, while the extirpation of these glands was effected. As they adhered to the great axillary vessels, they were cautiously detached by dissection, and by insinuating the finger where the cellular substance was loose, between the tumor and the great vein. This separation was nearly effected, only a slight connexion still existing at either extremity of the tumor. Proceeding to separate it, at the outer part of the axilla, a vein was divided, and a small quantity of venous blood discharged. This obscured the parts at that point, and the knife was therefore carried to the other extremity of the tumor. Scarcely was this done, when the patient struggled, and, on regarding her, I perceived her complexion to be a livid pale colour; and at the same instant the bubbling or clucking noise was heard, though indistinctly, but the place from which it issued was not visible, the surrounding skin and fat having fallen over it at the moment of the transfer of the knife. Directly the axilla was compressed, the patient became insensible, breathing in a distressed manner, as in apoplexy. The tumor was at once separated. The posture of the patient was changed, and she was supported by those around. Some brandy was poured down, and ammonia was introduced into the nostrils; the pulse, however, became less distinct every instant. Cloths dipped in hot water were thrown over the extremities; strong frictions were applied to the chest and to all parts of the body; considerable quantities of brandy were again poured down the throat. At this moment the livid colour of the cheeks gave place to a suffusion of vermilion red, and no glow in the cheek of a youthful beauty ever gave one so much pleasure as that flush. I was turning to the class, who watched the different operations with intense anxiety, to say, "the danger is over!" but checked myself, and continued the efforts. But the flush soon passed off; the lividity reappeared; the respiration became more feeble; pulse at the wrist scarcely perceptible; and, notwithstanding the redoubled applications of external heat and moisture, the extremities and whole body cooled rapidly, and presently the respiration ceased.

As a last effort, I opened the larynx and put in operation the inflation of the lungs by a bellows, in a very speedy and perfect manner, imitating the movements of inspiration and expiration with great exactness, continuing the general application of heat and frictions to the whole surface. These administrations were continued for about twenty minutes longer, without any encouraging appearances. At the end of this time, I perceived there was no remaining hope of the restoration of my patient to life. The friends being anxious to take advantage of a vessel then sailing for their home, the body was soon after removed, and no opportunity afforded for examination.

The effects of the entrance of air into the blood-vessels appear to have been known to Lieutaud, Morgagni, and other distinguished pathologists; but the danger of such an occurrence in surgical operations does not seem to have been adverted to, until the operation of M. Dupuytren, in which the admission of air through the external jugular proved suddenly fatal. Since the publication of this fact, the occurrence has presented itself to many surgeons in Great Britain and this country.

A natural scepticism in regard to these accidents has arisen from not considering the peculiar action of the auricles of the heart. How, it is asked, can air force itself into the veins, which are already filled with blood, and at the moment this fluid is discharging itself from an aperture in the vessel! The possibility of the accident will however be admitted, on recollecting that the auricles act not only like an expelling syringe, when they drive the blood into the ventricles, but that they have the power of suction when they dilate themselves, thus sucking the blood from the two cavæ, and, of consequence, from the great veins connected with the cavæ. This suction power of the auricles explains what would otherwise be unintelligible, the movement of blood through the large inactive veins near the heart.

There remains another difficulty. Why do not the sides of these veins collapse when the blood is pumped from them by the auricle? and if they do thus collapse, how can air be drawn in through a small aperture in one of these vessels? This objection has been removed by M. Bèrard, who has shown that the large veins near the heart are protected by fasciæ, connected to the coats of the veins by cellular substance. The fasciæ themselves are attached to bones, in such a way as to prevent their collapsing on the veins. Further, it may sometimes happen that the coats of a vein assume a morbid structure, which gives them an unhealthy rigidity, and in this manner prevents their collapse. This occurred to M. Dupuytren, as I am informed by my friend Dr. Lodge, who was in Paris at the time. M. Dupuytren, being about to divide a large varicose saphena vein, expressed some apprehension that air might be admitted, and that the result would be fatal. The vein was divided, the peculiar sound of the entrance of air was heard, and the patient expired.

In the first of the cases above related, the vein opened was a small vein crossing the neck from the median external jugular to the great internal jugular. At least I presume this to have been the vessel; though there can be no certainty of its identity, the incision in the neck being small, the parts not much uncovered, and the sheath of the internal jugular not opened. This small vein, stretched across the neck, was kept tense by its attachment to fixed veins at each extremity, and would thus be in a favorable position for the admission of air on the suction of the auricle.

The vein opened in the second case was the subscapular. It did not seem to be large, though perfectly visible before it was cut, and the point of the incision was at a sensible distance from the great axillary vein, say nearly an inch. The dissection had separated it from the surrounding parts in a considerable degree. The axillary cavity was extremely dissected; so that the attachments of the fasciæ covering the great vein must have been much relaxed.

Here then was a small vein, at some distance from the heart, dissected from the surrounding parts; and its receiving vein also dissected. The coats of the vein were not visibly diseased. The explanations of M. Bèrard will not therefore apply. The cause of the phenomenon in this case is to be sought in the position of the arm. The limb was extended and elevated; in consequence of which, the axillary vein was in a state of extreme tension. The subscapular vein was also kept tense by the chain of axillary glands and by the weight of the depending breast; for this organ had not been separated from the glands, in order that they might be drawn down by it and exposed.

The possibility of these accidents under circumstances like those above, where there could be so little reason to fear them, must be a cause of anxiety to operators, in the removal of tumors from the neck and armpit; and I know of no effectual means to guard against them. *Pressure* on the vessels intervening between the disease and the heart would often be impracticable; and, where it could be applied, the tension of the fasciæ would generally render it abortive. Causing the patient to *expire* the air from the lungs could only be practised for a moment. *Change of position*, by relaxing the vessels, would do something; yet the state of tension must in many cases be resumed, in order to carry on the operation. The immediate compression of the vessel on the appearance of the accident, might sometimes save the patient from death, though not from very threatening appearances: for, in the first case, the patient's life was preserved; but, although the accident was instantaneously arrested, he was saved with difficulty.

On a view of all these considerations, it appears prudent to suspend an operation in the vicinity of the heart, at the instant of the appearance of venous blood from a suspicious point; and to compress the vessel, that time may be had for observing whether dangerous symptoms are likely to arise; and if these actually appear, we should directly resort to the means spoken of: First, compress the orifice of the bleeding vein with the utmost care; second, apply pressure on the veins between the wound and the heart; third, relax the part in which the vein is seated; fourth, the patient may be directed to expire the air from his lungs.

The means to be pursued for saving life, after air has been admitted, have been stated in the history of these two cases, and I know of none more effectual than were adopted. The opening of the temporal artery gave great relief to Case I.; it was not resorted to in Case II., because the patient had already lost as much blood as she could spare during the operation.—*Ibid.*

⁂ For further remarks upon this interesting subject, and for additional cases and some experiments, showing the fatal effects which may arise from the admission of air into the veins during surgical operations, we refer our readers to our Journal for February 1831, pp. 122 and 175.—Editors, *London Med. and Phys. Journal.*

INTELLIGENCE.

ST. GEORGE'S HOSPITAL.

Dr. Macleod has been appointed one of the physicians to this hospital, vice Dr. Hewitt, resigned. When the vacancy was first declared, some other candidates started; but it was quickly discovered that opposition would be in vain, and, consequently, Dr. Macleod obtained the important office without the usual trouble of a contested election.

MIDDLESEX HOSPITAL.

After an arduous contest, Mr. Tuson has been elected assistant surgeon to this institution, in the room of Mr. Arnott, who succeeded to the surgeoncy, without opposition, upon the demise of Mr. Joberns. Mr. Tuson was opposed by Mr. Shaw and Mr. Phillips, and his majority over the former of these gentlemen was only eighteen.

NEW MEDICAL SOCIETY AT THE MIDDLESEX HOSPITAL.

A new society has recently been formed by the pupils of this hospital, which is to meet every Tuesday evening, at eight o'clock. The cases in the hospital will at all times furnish the members with ample food for discussion, and, in our opinion, they will do well to confine themselves to the consideration of the cases they have immediately under their eyes, rather than to follow the example of some other societies of a similar nature, in which much time is occupied, and perhaps we might say wasted, by visionary speculations, and proposals for new modes of treatment. We believe that the physicians and surgeons of the hospital will alternately preside.

HONOURABLE DISTINCTION CONFERRED UPON SIR ASTLEY COOPER.

The King of France has bestowed upon Sir Astley Cooper the decoration of the royal legion of honour. It is said that this mark of distinction was conferred upon Sir Astley at the suggestion of Prince Talleyrand. From the general and well-merited esteem in which Sir A. is held in this country, we are sure that all his professional brethren will feel gratified at the mark of attention which has thus been bestowed by a foreign monarch.

Dr. Robert Brown, the celebrated naturalist and botanist, has been elected foreign member, in the place of the lamented Scarpa, by the Academy of Sciences in Paris. Many men of science and strong claims to this honour were nominated as candidates, but Dr. Brown had a considerable majority of votes.

THE COMPANY OF APOTHECARIES *v.* COLLINS, AN EDINBURGH PHYSICIAN.

In this case the defendant was prosecuted by the Apothecaries' Company for practising pharmacy in England, without a licence. For the defence it was urged, that the defendant had received the degree of doctor of medicine in Scotland. It was ruled by the judge, that he was nevertheless amenable to the "Apothecaries' Act," and he was sentenced to pay a fine of £20.—A petition from the medical students of the university of Edinburgh has, we understand, been transmitted to parliament, praying for the abolition of the Apothecaries' Act, which precludes them, even when admitted as licentiates of the College of Physicians or Surgeons of Edinburgh, from dispensing medicines in England.

A ZEALOT IN THE HOMŒOPATHIC DOCTRINES.

We have received a most extraordinary epistle from one John Borthwick Gilchrist; but whether our correspondent has dipped his pen in a sportive mood, or whether he is in downright earnest, we cannot venture to determine. If he be inclined to be merry, we have no objection to laugh *with* him for a moment, by way of distraction from our ordinary and graver duties; and if he be really serious, why then, in spite of our editorial gravity, we must laugh *at* him.

We must premise our brief account of Mr. G.'s letter, by declaring that we mean not to venture any dogmatic opinion upon the merits of the homœopathic method of treatment: we know too little of it to be competent judges of its value, but we may just hint our belief that it is a kind of do-nothing and procrastinating system, under which, no doubt, patients frequently recover, because nature was all-sufficient for their cure. But to the epistle before us, of which, however, we can only extract the most pithy parts.

It is addressed to "all the practitioners of the medical, medicinal, and mechanical branches of the healing art, in every quarter of the world." Mr. G. tells us "that he was himself educated for all the above-mentioned departments of our useful vocation," and, consequently, that none of his brethren can imagine his address "is intended to convey the smallest offence, either in our collective or individual capacities." Any such proemial assurance was quite unnecessary, for his letter is not at all calculated to excite the slightest feeling of displeasure towards the writer. He must, we think, be regarded as "a merry soul," but a little too tedious in his fun. "While still a young man," Mr. G. began to have certain misgivings as to the solidity and efficacy of the medical doctrines of the day, and the "very suspicion of something unsound in the foundation of medical science," together with a large share of tender-heartedness, which totally unfitted him for the melancholy scenes incidental to the profession of physic, induced him to relinquish a business, from which he "could hardly expect either fame or fortune," for "others of a literary nature, more congenial with his own feelings," and under the East India Company's protection. "Having thus devoted the prime of youth and manhood of his existence" to other avocations, all his medical cunning was lost, except "a few elemental reminiscences," which we are informed have been very useful to him during a long season of personal suffering. He expresses the philanthropic wish that he may still live "until the public shall reap the whole of the advantages proposed to be derived by mankind at large through the medium of this earnest appeal," the object of which is to point out the very wonderful effects of "a new system of physic," which is no other than that of which we have all heard, namely, Dr. HAHNEMANN's, or the Homœopathic Doctrine.

Mr. Gilchrist is mistaken in supposing it necessary to give a particular description of the creed which he so warmly espouses. Every body knows, as well as he does, the peculiarities of the Hahnemannian belief, although few, perhaps, believe so implicitly in their rationality. There may, however, for aught we can declare to the contrary, be some very worldly motive in informing us precisely at whose shops the "homœopathic publications" may be purchased; but, as we are very unwilling to stop even the transfer of a sixpence to those honest worthies the booksellers, we forbear from descanting upon the probable motives that have induced Mr. G. so particularly to specify their "whereabouts."

Come we now to some of the sober eulogies in which John Borthwick Gilchrist indulges. We shall mark his phrases by inverted commas, and only take the liberty of interposing here and there a connecting link, when we wish, like the schoolboy, to skip a little, and cut short a rather long and weary task. "Gratitude," says J. B. G., "bids me hail the new system as the gospel of medical salvation, whose genial balm of Gilead may be collected from Hahnemann's organon, which I at least may justly call the New Testament of my medical faith." It appears, that for "six revolving summers" Mr. G. was "under the hands of very celebrated and generous Allopathists, but all in vain:" in as many weeks, the "Homœopathic remedies acted like a spell, though the dose taken, once in eight days, is not so much as a very moderate pinch of snuff," and, "from a constant state of low spirits, he became all at once as light and gay in body and mind as a skylark," and now "feels himself hourly soaring on the pleasures of hope!" being rescued from "a long string of horrors, nicknamed *blue devils*." Mr. G. assures us, that "how, when, where, and why" the potent little doses act, he cannot tell. He never saw the physician who prescribed for him. Every thing was affected by letter; the medicine was sent by post; and all he knows of it is, that "its nature is antisporic, the colour white, the taste sweetish, its bulk a pinch of snuff," and that it is to be taken once a week. Such were the happy effects of the "sweet, white pinch," that, after "being virtually for several years buried alive, for the most essential purposes of existence," Mr. G. "actually feels like a man risen from the dead," and, "instead of being still charged with gloomy misanthropy, his whole frame glows with the most expansive benevolence," and he "could, with delight, *if able to do so*, fly on the wings of the morning, or, like the fearless eagle, from east to west, and north to south, that he might enjoy the supreme felicity of making all the sick well, and all the sad happy." "As one proof of boundless philanthropy, I hereby (concludes our correspondent,) cheerfully forget and forgive every offence which any person has ever committed against me; and I moreover conjure whomsoever I may have offended, to evince the same charitable disposition towards me."

So much for the effects of the homœopathic treatment upon Mr. J. B. Gilchrist. From the letter itself, we certainly should never have imagined that he had jumped from physic to literary pursuits, if he had not very kindly so informed us; and, as his punctuation and style of writing are any thing but sound, we advise him to take another "pinch" of the sweet white powder; for who knows but that the remedy may cure the maladies of his pen, as it has those of his body.

LITERARY INTELLIGENCE.

We have been favored with a sight of a very ingenious and useful work, which will soon be published by Mr. Spratt, entitled "Obstetric Tables," the object of which is to illustrate elementary works on midwifery. It will contain twelve coloured plates, representing in layers the anatomy of the parts engaged in labour, and also the various positions of the fœtus, and the mode in which instruments are to be applied. The price is moderate; and we think it cannot fail to be successful.

Preparing for publication, A Translation of the Practical Treatise on the Diseases of the Uterus and the Appendages, of Mme. Boivin and M. Duges, by G. O. Heming, of Kentish Town, Member of the Royal College of Surgeons; with additions.

MONTHLY LIST OF MEDICAL BOOKS.

[*Medical Works cannot be entered on this List unless a copy be sent for the purpose, the titles of Books having frequently been sent to us as published, which have not appeared for weeks, or even months, after.*]

The Dissector. By R. D. Forster, Surgeon. Part I. Folio. Six Plates, coloured.—Burgess and Hill, London.

The Demonstrator; being an Explanation of the Dissector of the Human Body. By R. D. Forster, Surgeon. In sixteen Parts. Part I.—8vo. pp. 50. Burgess and Hill, London.

This work deserves encouragement. It will prove extremely useful to students, by recalling to their minds any anatomical facts which may have escaped their recollection; and it is admirably adapted to enable practitioners, who cannot attend the dissecting room, to keep up their anatomical knowledge at little expense of time or labour.

A Treatise on the Physiology and Diseases of the Eye: containing a new Mode of curing Cataract without an Operation; Experiments and Observations on Vision, also on the Inflection, Reflection, and Colours of Light. Together with Remarks on the Preservation of Sight, and on Spectacles, Reading Glasses, &c. By John Harrison Curtis, Esq. Oculist; Aurist to his Majesty, &c.—8vo. pp. 222. Longman and Co., London.

A Treatise on Indigestion and its Consequences, called Nervous and Bilious Complaints; with Observations on the Organic Diseases in which they sometimes terminate. By A. P. W. Philip, M.D., F.R.S. L. and E., &c. *Seventh Edition.*—8vo. pp. 231. Renshaw and Rush, London.

Part III., March 1833. Principles and Illustrations of Morbid Anatomy; adapted to the Elements of M. Andral, and to the Cyclopædia of Practical Medicine (with which it will correspond in size). Being a complete Series of coloured Lithographic Drawings, from Originals by the Author; with Descriptions and summary Allusions to Cases, Symptoms, Treatment, &c. Designed to constitute an Appendix to Works on the Practice of Physic, and to facilitate the Study of Morbid Anatomy in connexion with Symptoms. By J. Hope, M.D., F.R.S., Physician to the St. Marylebone Infirmary, &c.—Whittaker and Co., London.

Outlines of the Course of Lectures on Military Surgery, delivered in the University of Edinburgh, by Sir George Ballingall, M.D., F.R.S.E., Regius Professor of Military Surgery, &c.—8vo. pp. 589. Black, Edinburgh; Longman, London.

On the Mind, and Nature of Human Knowledge; being the Substance of a Paper read to the Literary Society, Bromley House, by George Cox, M.D.—8vo. pp. 67. Simpkin and Marshall, London.

A Practical Appeal to the Public, through a Series of Letters, in Defence of the New System of Physic by the illustrious Hahnemann. Letter the First. By John Borthwick Gilchrist, LL.D. &c.—8vo. pp. 100. Parbury, Allen, and Co., London.

No. I. Hortus Medicus; or, Figures and Descriptions of the more important Plants used in Medicine, or possessed of Poisonous Qualities; with their Medical Properties, Chemical Analysis, &c. &c. By George Graves, Fellow of the Linnæan Society, Editor of the new Edition of Curtis's Flora Londinensis, Author of a Monograph on the British Grasses, &c.; and John Davie Morries, M.D., Member of the Medico-Chirurgical, Royal Medical, and Plinian Societies of Edinburgh, &c.—4to. pp. 32; ten Plates. Black, Edinburgh; Longman, London.

APOTHECARIES' HALL.

Names of Gentlemen to each of whom the Court of Examiners have granted Certificates:

FEB. 28.

William Day, of Hull
Charles Dilke, Appleby, Leicestershire
Frederiak Disting Tothill, Exeter
Edward Joseph Weston, Kennington.

MARCH 7.

Peter Brown, of Thackley, Yorkshire
Thomas Bradley, London
Thomas Lambert Hinton, Daglingworth
Edwin Moss, Cheltenham
Robert Nixon, Wigton
Alfred Pett, London
John Phillips, Newmoat, Pembroke
John Simpson Rutter, Lichfield
Robert Holden Stone, Brasted, Kent
William Thomas, Minichinhampton.

MARCH 14.

William Carfrae, of Edinburgh
Douglas Dutton, London
Henry Whitworth Kerr, Manchester
Edward William Pollard, Brompton
James Yates Rooker, Darlaston
Thomas Sweeny, Market Street
John Wightman
Henry Wilson, Runcorn
Michael William Kansby, Abergavenny

MARCH 21.

John Grayling, of Canterbury
George Dowler Hastlewood, Birmingham
Thomas Goldson Irving, Portsmouth
Thomas Philbrick, Witham, Essex
Alfred Prentice, Essex.

METEOROLOGICAL REGISTER,

By Messrs. HARRIS and Co., Mathematical Instrument Makers, 50, High Holborn

	Moon.	Rain	Thermometer.			Barometer.		De Luc's Hygrometer		Winds.		Atmospheric Variation.		
Feb.		gauge.	9 a.m.	max.	min.	9 a.m.	10 p.m.	9 a.m.	10 p.m.	9 a.m.	10 p.m.	9 a.m.	2 p.m.	10 p.m.
20			43	45	40	28.86	29.04	76	77	WSW	NW	showery	cloudy	rain
21		.11	42	46	39	29.57	.80	80	82	NE	E	overcast	showery	cloudy
22			43	45	36	.80	.80	82	81	ENE	E	fine	fine	fine
23			38	43	35	.67	.58	79	76	ENE	ESE			
24			40	46	38	.51	.46	79	83	SE	S	rain	rain	cloudy
25		.06	42	47	43	.40	.35	82	82	WSW	SW	foggy	cloudy	fine
26			46	50	41	.15	.96	83	82	SSW	SSE	showery		
27	☽		43	46	39	28.91	29.06	82	81	S	NW	rain	cloudy	
28		.22	42	45	38	29.09	28.83	83	79	SW	W	foggy	rain	
Mar.														
1			43	47	38	28.87	29.13	77	75	WSW	WNW	fine	fine	
2			45	50	48	29.53	.66	75	76	WNW	W			
3			51	54	47	.68	.46	78	76	SW	SW	cloudy	fine	cloudy
4			50	55	42	.51	.67	75	75	SSE	SE	foggy	fine	cloudy
5			44	51	42	.80	.80	75	74	S	N			
6	○		44	46	38	.92	.97	74	71	NNE	N	fine		
7			41	45	34	30.04	30.12	74	71	N	E		cloudy	
8			38	40	31	.07	.07	69	70	E	E	cloudy	fine	cloudy
9			37	39	34	29.92	29.82	72	72	NNE	ENE	snow		cloudy
10			38	41	32	.82	.82	73	73	NE	NE	fine		fine
11			36	40	34	.84	.87	73	72	E	E	snow	cloudy	cloudy
12			37	41	32	.83	.77	69	68	E	E	fine	fine	fine
13	☾		34	40	29	.57	.35	67	68	ESE	SSE	haily		
14			35	42	32	.21	.21	68	66	SSE	SE	fine		
15			34	40	29	.21	.29	66	71	ESE	E			
16			43	48	36	.29	.32	74	73	ESE	SSE			
17			39	43	38	.35	.44	80	86	E	E	showery	rain	rain
18		.48	40	42	35	.53	.61	88	85	E	E		fine	fine
19			39	45	32	.77	.81	83	79	ENE	ENE	fine	showery	fine

The quantity of Rain fallen in February, was 1 inch and 7.100ths.

TO CORRESPONDENTS.

Mr. **Ballard** *will excuse us for not publishing his remarks on the subject of* "Medical Electricity:" *we admit their ingenuity, but we do not think the facts are as yet sufficiently substantiated to admit, with propriety, of any hypothesis upon the subject. We shall always be happy to hear from* Mr. B.

J. G.—*A paper will soon be published in this Journal upon the subject, in which reference will be given to various foreign and English authors who have written on it.*

THE LONDON
Medical and Physical Journal.

411, VOL. LXIX.] MAY 1833. [83, *New Series.*

"For many fortunate discoveries in medicine, and for the detection of numerous errors, the world is indebted to the rapid circulation of Monthly Journals; and there never existed any work to which the Faculty in Europe and America, were under deeper obligations than to the 'Medical and Physical Journal of London,' now forming a long but an invaluable series."—RUSH.

ORIGINAL PAPERS.

THE EPIDEMIC CHOLERA.

A Treatise on the Epidemic Cholera; containing its History, Symptoms, Autopsy, Etiology, Causes, and Treatment. By ALEXANDER TURNBULL CHRISTIE, M.D., of the Honourable East-India Company's Service; Member of the Royal Asiatic Society of Great Britain and Ireland, of the Wernerian and Royal Medical Societies of Edinburgh, &c.

(Continued from page 253.)

WE have already observed that the epidemic reached the most southerly point of the Peninsula of India in January 1819; and it was at this time it first appeared in the Island of Ceylon, where Colomba was the first town attacked by it. As usual, it gradually spread in all directions; broke out in Trincomalee in April, and in Point de Galle in July, and had visited almost every part of the island before the end of the year.

It has been said that the town of Trincomalee was infected with the disease by the crew of the ship Leander, in July 1820, who were suffering from it before their arrival, and had caught it at Pondicherry; but there is little reason for supposing this to have been the case, the disease having already existed in the island for more than a year, and Trincomalee having been once before visited by it. It has been also supposed to have been introduced by means of contagion into the island of Mauritius, where it first made its appearance in September 1819; but it is sufficient to state, in opposition to this notion, that the medical commission appointed by the government of that settlement, to investigate the nature of the disease, gave it as their opinion that it was not contagious. It found its way to the island of Bourbon in January 1820. The government had taken all the precautions in their power to prevent its introduction into the island, and denounced the penalty of death against any person found clandestinely landing on its shores; but all to no purpose. It must be remarked, however, that it has been supposed that the disease had been introduced by means of a communication having taken place between a boat from the shore and a vessel named the Picvar, which arrived on the 7th of January from Port Louis, in the Mauritius, where the disease then prevailed.

We have now arrived at that part of our narrative which demands our most anxious attention, viz. which exhibits the disease spreading from India to the west, and thus approaching nearer and nearer to our own homes. In the summer of 1821, it raged with tremendous violence along both sides of the Persian Gulph, especially at Muscat, Bushire, and Bussorah, and at the latter place is said to have carried off 14,000 people in fifteen days. It reached Shirauz in September, and numbered among its victims the mother, one of the wives, and a child of the Prince of Persia, besides many Georgian females; and 6,000 deaths were counted out of a population of 40,000. It reached Bagdad about the same time; it then subsided considerably during the winter months, but burst forth with fresh fury in the summer of 1822, when it attacked Teheran, and spread all over Azorbijan. It was at this time that the Prince Abbas Mirza was carrying on the war against the Turks on the high table-land near the source of the Euphrates, when both armies were destined to suffer more severely from an invisible scourge than from the swords of their antagonists. The following account of the occurrence of the epidemic in the Persian army, after the battle of Toprah Kullah, is extracted from the travels of Mr. Baillie Fraser. "The Prince pursued his success as far as the pass of Deear, about three days' march from Topra Kullah, when the epidemic cholera, which had appeared in his camp even previous to the action, now broke out violently, and he thought fit to commence a retrograde movement to Khoace. From that moment the Persian army also appears to have been virtually dissolved; the men dropt off rapidly, and whole troops deserted to return to their homes, so that, by the time he reached Kooe, he had scarcely any army to dismiss. The loss by disease during this retreat was certainly great, but has been variously represented. The most probable accounts set it down at about four thousand men, or about a tenth part of the whole force; in some battalions three hundred out of one thousand died, and the rear of their line of march was strewed with dead bodies, as if it had been all the way in action." (P. 315.)

"It is difficult to say how or from whence the epidemic cholera, that scourge of the East, reached Tabreez. It was supposed to have reached from Bagdad along the caravan road, by Hamadan and Sennar, but no accounts to be at all depended on could be obtained of its gradual progress. A whisper had gone forth that the disease had appeared in the town as early as the 12th of July; but a week made it no longer doubtful, and upon our return to Tabreez on the 24th, after a short absence, we understood that from fifteen to thirty were daily dying of cholera.

"A panic now commenced, and the authorities of the place, instead of endeavouring to restore confidence, and maintain order in the prince's absence, encouraged the inhabitants to quit the city. The old Caimoakan set the example, by ordering away the prince's harem, and announcing his intention to follow it; he did not, however, in his alarm, neglect his English friends, but sent a message advising them to follow his example, and offering a garden in the country for their accommodation.

"During the next ten days the state of the distemper varied greatly; sometimes the fatal appearances diminished so much, that it was even doubted whether the alarm had not been a false one; the sick were attacked with vertigo and sickness, which was attributed to the powerful effect of the sun's rays; and though some died, yet more recovered, without having evinced many of those more peculiar and alarming symptoms which generally mark the disease. By degrees, however, these symptoms disappeared; violent vomiting, accompanied with painful cramps, damp clammy sweat, cold and bloodless extremities, burning heat at stomach, a sunken death-like countenance, cessation of all the pulses: these, and other striking characteristics of this fearful disease, marked the fatal cases, and terminated in death.

"Often when the disease was at its height, the first seizure, indicated by vertigo, proved fatal at once. Several instances came to our knowledge of persons thus attacked in the streets, who fell down senseless, and never recovered.

"The treatment pursued by the natives was, in all cases, the same which we had remarked in other parts of Persia. The moment a person was attacked, they seized him, and drenched him in cold water, made colder by ice, which is abundant in Tabreez; verjuice was thrust down his throat when the unhappy patient could swallow, and ice was often heaped upon the stomach. A chill was thus given which probably aided the disease, the nature of which is to drive the circulation from the surface and extremities. This discipline, however injurious in cases of true cholera, was salutary and successful in cases of mere vertigo, which, from the heat of mid-day in the sun, was not unfrequent; and the occasional cures thus performed on persons supposed to be labouring under cholera, strengthened the faith of the natives in their own practice.

"During this time the natives, panic-struck, fled in crowds from their homes, until the city became a desert."*

It is remarkable, that about the same time that the epidemic broke out along the Persian Gulph, it also made its appearance in Khorassan, without in any instance being traceable to contagion; and is also said to have spread over great part of Arabia, to the holy cities of Mecca and Medina.† It even stretched as far as the eastern shores of the Mediterranean, and inflicted its scourge upon the towns of Aleppo, Antioch, Latichea, and Damascus.

The town of Astracan, which has since been so severely afflicted, received the epidemic for the first time in September 1823, when the Russian flotilla of the Volga also suffered. But it did not continue long, and was supposed to have been checked by the occurrence of a very intense frost. After the year 1823, the disease subsided in all the countries we have just mentioned, and for several years it had completely disappeared, excepting a few sporadic cases, which were always observed to be most prevalent during the autumn. Thus it continued till the year 1829, when it again invaded Teheran,‡ and other towns of Persia; and about the middle of the year it suddenly appeared in the town of Oremburg, situated on the river Oural, between the 51st and 52d north latitude, and at a time when all the surrounding countries for hundreds of miles were healthy, and had hitherto been exempt from the malady.

Again it received a check from the cold of winter; but it only lay dormant for some months, to revive with increased malignancy in the spring of 1830. It was in June that it appeared for the first time in Georgia. It had been raging in the Persian towns of Resht, Zingalak, and Touris, and about the middle of this month broke out in Saliany at the mouth of the river Kur, whence it spread into the provinces of Bakou and Koubac, into the Rhanat of Talyskh, to Derbent, into the province of Seleki, and the district of

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* Pp. 316, 317. † Lieut.-Col. Monteith's MSS.

‡ M. Moreau de Jonnes is mistaken in supposing that this was the first invasion of the disease at Teheran; for it raged there in July 1822.—See "Letter from a Gentleman in Persia, &c." Asiatic Journal, 1823.

Elisabethpol. Up to the 21st of July, out of 4557 persons attacked in these different places, 2447 had been cured, 1655 had died, and 457 were still suffering. From the district of Elisabethpol the epidemic ascended the Kur, appeared in the environs of Tiflis on the 9th August, and between the 13th and 19th of that month it carried off 238 persons. It was supposed there not to be contagious, and that the best means to escape from it was to retire to elevated situations; and accordingly the authorities of Tiflis gave the inhabitants permission to seek a refuge in the mountains, and more than two-thirds of them left the city. The total number of cases at Tiflis from the 9th of August up to the 1st of October, when the disease had ceased was 2222, of which 1575 had proved fatal, and the remainder had been cured.

From Saliany the epidemic took another direction, following the shores of the Caspian Sea and of the Volga. It broke out on the 17th July in the environs of Sedlistoff, and on the 1st August (o. s. 19th July) at Astrakan, when, in the course of ten days, out of 1229 persons who were attacked, 433 died; and afterwards the mortality had increased there to nearly a hundred a-day. It appeared on the 17th August at Tzeretzin, and on the 21st at Saratoff, and at the latter place raged with very great malignancy for nearly a month; for we find, by the official returns, that up to the 21st September it had carried off altogether 2367 individuals, of whom 1133 were men, 1011 women, 118 boys, and 105 girls.

It also extended its ravages into the province of the Caucasus, on both banks of the Terek, to Kizliar, and along the Kuma, to Novotcherkask, and to some places in the territory of the Don Cossacks, where it continued till the beginning of October; and it reappeared in the district of Oremburg, at the towns of Gourieff and Ouralsk.

At this time his Majesty the Emperor of Russia caused the most active measures to be adopted, to stop, if possible, the progress of the disease, and to afford relief to the sufferers. Numerous medical officers, with medicines, were sent into the provinces where the disease prevailed; a medical commission was appointed to investigate the nature of the epidemic, and to take whatever measures they might think fit for checking it; and Count Zakreusky, minister of the interior, was also sent into these provinces for a similar purpose.

Frequent accounts were now received at St. Petersburg of the progress of the disease, towards the north. It had penetrated about the beginning of September to Samara, on the Volga, in the government of Sumbirsk, and to Penza; and several boatmen had died of it on-board of the merchants' boats at Nigini, Novgorod, towards the middle of September. It reached Kostroma and Yarosloff in the middle of this month, and carried off many victims in these and other towns of the same district. It also continued to spread through the Ukraine, and visited the towns of Kherkoff, Izume, &c. in the beginning of October.

The epidemic now approached close to the city of Moscow, and the military governor, Prince Galatzyne, hastened to take precautions against it. In order to prevent all communications with the inhabitants of the districts where the disease already existed, a military cordon was established along the frontiers of the government of Moscow: four passages only were left open, and there barriers of observation were stationed. Of the eighteen entrances to the city itself eight were closed, and all strangers who arrived at the others were directed to four stations, in order to undergo quarantine. Notwithstanding these careful measures, the disease made its appearance in the city, and the first cases are supposed to have occurred on the 28th September, two days before the above precautions had been taken. A commission was immediately appointed, consisting of two sections, the one administrative, the other medical, the former being charged with the duty of inspecting the different quarters of the town, and of taking measures for preventing the spread of the disease; the latter having to attend to its treatment, and to draw up and publish daily bulletins.

The city of Moscow contains 300,000 inhabitants, and it is remarkable that its sanitary condition was never more favorable than it was at this time, the average number of deaths amounting to only fifteen a-day, whereas they had generally averaged thirty.*

On the 11th of October, the governor-general of Moscow published the following letter, which he had received from his Majesty the Emperor.

"It is with the most profound grief I have received the news you have communicated to me. Make me acquainted by expresses, with the progress of the disease. My departure will be regulated by the communications you transmit to me. I will come to partake of your dangers and labours. Let us submit ourselves to the decrees of the Almighty! I approve of all the measures you have adopted. Thank, in my name, those who under these circumstances unite their efforts to yours. Meanwhile I build upon them my strongest hopes."

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* From the month of September up to the present time, (January 1831,) official bulletins have been published in the Russian newspapers of the number of seizures, deaths, and recoveries in the different governments; but such details would be inconsistent with the nature of the present work, which professes only to trace the general features and progress of the disease.

"*24th September* (o.s.), *or 6th October.*"

The impression of this letter was scarcely complete when the Emperor himself arrived in Moscow, which produced the happiest effects upon the depressed spirits of the people. A still more vigorous quarantine was now enforced; and no one was permitted either to enter or depart from the city, except for the conveyance of provisions, for which certain market-places were exclusively appropriated. A double military cordon was also formed upon all the roads which lead to St. Petersburg, and placed under the command of experienced generals, to prevent, if possible, the communication of the disease to that capital.

Every precaution against infection which could be thought of was adopted; and, among other things, large quantities of the disinfecting substance, the chloruret of lime, were employed in all quarters, but to no purpose, the malady continuing its ravages. The inhabitants of Moscow displayed the greatest patriotism and philanthropy, in their endeavours to aid their suffering fellow-citizens. Large sums of money were subscribed, for the purchase of medicines and other necessaries; numerous hospitals were established, and many private houses were voluntarily given up to be converted into abodes for the sick.

In the beginning of November the disease began to decline in various parts of Russia, and had ceased in many of the towns of the southern provinces; but it again burst forth, in the government of Astracan, among the Kalmuks of the Oulouss and Erksteneff, and in the horde of Kirghises, near Kven Peski.

On the 29th October, a committee of health, which had been established at Odessa, had its first meeting, to take into consideration the best means of preventing the introduction of the epidemic into that town. A few cases are said to have occurred between the 29th of this month and the 1st or 2d of November; the disease then subsided until the middle of November, about which time eleven cases were reported, seven of which proved fatal, and by the latest accounts* we learn that it has occasionally reappeared, and had not entirely ceased in the middle of December.

The disease having diminished considerably in Moscow in the beginning of December, the Emperor commanded the external cordon to be removed, all the internal arrangements, however, being still kept up.

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* Received in January 1831.

From the first appearance of the disease in Moscow, between the 28th and 30th September, the number of cases gradually and slowly increased till the 20th or 22d October, from which time till the end of the month, the new cases averaged about two hundred a-day, and the deaths about half that number. This was the period of its greatest malignancy, and henceforward it began slowly but sensibly to diminish. During the first half of November, about ninety-five persons upon an average were attacked daily, of whom more than one-half, or nearly forty-five a-day, died. In the latter half of the same month, the number of attacks and deaths averaged respectively about forty-eight and twenty-two a-day. The disease had now very much abated, but still continued throughout the whole month of December, the average number of seizures amounting to fifteen, and of deaths to eight a-day. The total number of cases in Moscow, from the commencement of the epidemic, in the end of September, up to the 2d January 1831, was 6305, of which 3533 had proved fatal; a great mortality, when we consider that the sick had all the advantages of speedy medical aid, local hospitals, and all the resources of a great capital.

"Is the cholera which has spread over the greater part of Asia, and has been recently communicated to Russia, a new disease in Europe?" This is an important question, and must now demand our attention, being not merely one of speculation, but one which is intimately connected with the theories which have been proposed concerning the nature and causes of the epidemic. It shall be shewn, in the following chapters, that there are two distinct kinds of cholera, to which I have applied the names of catarrhal and inflammatory (cholera catarrhalis[*] and cholera pyretica[†]), and that the two are sometimes conjoined, and thus give rise to mixed forms of the disease. The latter has always been a well-known disease in all countries; the first has been principally confined to India, and is that which is now desolating so large a portion of the globe.[‡]

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[*] Epidemic Cholera, Spasmodic Cholera, Cholera Asphyxia Mordechi, of other authors.

[†] Bilious Cholera, and Cholera Morbus, of other authors.

[‡] The disease by which the Israelites were so severely scourged in the time of David, as related by Josephus, bears a striking resemblance to the epidemic cholera, as will appear from the following passage:

"The prophet had no sooner received and reported David's answer, but the Israelites were seized with a most unaccountable distemper, that was still attended with certain death, and accompanied with accidents that baffled all the

Now it is worthy of remark, that the few descriptions of cholera which have been handed down to us from the Greek and Roman physicians, only correspond to the inflammatory or mixed forms, and no mention is made of the disease having ever occurred epidemically. Hippocrates and Galen must have been acquainted with the common cholera, since it is mentioned in different parts of their works; but they give no detailed account of it. The following description of Celsus is the most accurate which is found in the works of the ancients, and corresponds to some of the mixed cases which will be found in another part of this work.

"A visceribus ad intestina veniendum est quæ sunt et acutis et longis morbis obnoxia. Primoque facienda mentio est choleræ; quia commune id stomachi atque intestinorum vitium videri potest; nam simul et dejectio et vomitus est: præterque hæc inflatio est, intestina torquentur, bilis supra infraque erumpit, primum aquæ similis, deinde ut in ea recens caro lota esse videatur, interdum alba, nonnunquam nigra vel varia; ergo eo nomine morbum hunc χολεραν Græci nominarunt. Præter ea vero, quæ supra comprehensa sunt, sæpe etiam crura manusque contrahuntur, urget sitis, anima deficit: quibus concurrentibus, non mirum est si subito quis moritur; neque tamen ulli morbo minori momento succurritur."*

In the fifth chapter of the second book of Aretæus on the causes and symptoms of diseases, we find a tolerably accurate description of the inflammatory cholera; while the following, taken from the twentieth chapter of the third book of Cælius Aurelianus, rather corresponds to our mixed cases: he says,

"Precedit frequenta cholorices stomachi gravedo atque tentio: anxietas; jactatio; vigiliæ; tormentum intestinorum cum sonitu, quem Græix borborismon vocant. Ventris dolor; atque per podicem venti fluor nihil relevans; suctationes fumosæ; nausea; salivarum fluor; gravedo thoracis cum membrorum defectu; surgente passione jugis vomitus, et primo corrupti cibi; sicut frequenter occurrit, et humoris atque fellis flavii, dehinc vitellis ovorum similis; tunc prasii atque æruginosi; ultimo etiam nigri; ventris quoque turbatio cum dolore; et egestio vomitorum similis, hoc est spumora, et acerrima, cumfrequenti delectatione vomendi. Crescente passione aquasi atque tenuis liquoris sit egestio, et aliquando similis loturæ carnis. Feruntur etiam cum his humoribus plerumque subalbida desputa; sequitur etiam densitas pulsus, et articulorum frigus, atque vultus nigræ fuscatus; ardor atque sitis-insatiabilis; spiratio celerrima; et contractio vel conductio membrorum, cum nervorumtensio, ac surarum et brachiorum. Præcordiorum etiam ad superiora raptus, cum dolore iliaco simili; aliquando etiam egestio ventris sanguinolenta, vultus in maciem atque tenuitatem deducti; oculi rubri; et in ultimo singultus."

Descriptions of the disease have also been given by numerous other medical writers both ancient and modern; among

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doctors, either to find a remedy or reason; but they died, in short, one upon the neck of another, and nobody knew how. *Some went off with gripes and torments, that despatched them in a trice; some with incurable faintnesses and langours, in despite of the physicians; others with vertigo, dimness of sight, suffocations, &c.; some, again, expired themselves in the very office of mourning for the death of others.* The mortality was so great, in fine, that, between break of day and dinner-time, there were swept away by this pestilence seventy thousand persons."—*The Works of Fl. Josephus, by* Sir Robert L'Estrange. London, 1702.

* Celsus de Medicina, lib. iv. chap. 2.

whom may be mentioned Paulus Agineta, Avicenna, Sydenham, Riverius, Hoffman, Cleghorn, Sauvages, and Girdlestone; none of whom, however, appear to have been acquainted with the pure catarrhal cholera.

The too famous epidemic known by the name of the black pest, which desolated Europe in the middle of the fourteenth century, has been supposed to resemble cholera.[*] It commenced in Upper India and the surrounding provinces, in the year 1346. It consisted of a vomiting of blood, attacked all conditions of people, and proved fatal very suddenly, or in two or three days. It spread from country to country, and within a year it included the whole of Asia. It then spread through Turkey into Greece, Sicily, Italy, and the opposite coast of Africa. In 1348 it had included the whole of Italy, except Milan and some parts of the Alps, and in the same year passed into Germany, Savoy, France, and Spain. In 1349, it had spread over the whole of the middle of Europe, except Brabant, which it affected but little, the north of Africa, England, Scotland, and Ireland; and in 1350 it extended over all the northern countries of the continent.[†] No accurate description of the symptoms of this epidemic have been preserved, so that we cannot say how far they agreed with those of cholera; but the mode of propagation appears to be similar in both, and it is remarkable that they spread over nearly the same tracts of country, and followed the same direction.

We are told by Sydenham that the cholera morbus prevailed with great severity in the year 1676. Among its symptoms are mentioned copious vomiting, spasms, small pulse, fainting, cold sweat; and the remedy he recommends is laudanum in strong cinnamon-water;[‡] which shew that this was not the pure inflammatory cholera, but probably belonged to those mixed cases of the malady which I have described in the following pages, and which are of frequent occurrence in the epidemic visitations of India.

Sauvages defines the cholera to be "la complication de la diarrhee et du vomissement, ou de la diarrhee avec les nausees, ou du vomissement avec les tenesmes;" and he distinguishes no less than ten species, viz. cholera sec, chol. des pales couleurs; cholera causé par des mauvais champignons; cholera causé par des poissons fossiles; cholera causé par impoison animal; cholera vermineux; cholera dissenterique; cholera gouteux; cholera crapuleux; cholera spontané, ou cholera morbus de Sydenham." It is impossible to say whether any of these correspond in their symptoms exactly to the catarrhal cholera; but none of them had ever occurred as a wide spreading epidemic.

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[*] I understand that HEERAN, the celebrated historian and professor at Gottingen, in a memoir lately read before the Royal Society of that city, but which I have not seen, has proposed the question, "Has the cholera which has reached Europe been known in this part of the world before?" and has given as his opinion, that the only disease which has borne any analogy to it is the pestilence mentioned above.

[†] See Historia di Matteo Villani, Cittadino Fiorentino, il quale continua l'Historia di Giovan Villani, suo fratello, &c. In Venetia, 1562. Lib. i. c. 1.

[‡] Sydenham, Epistolæ de Morbis Epidemicis, &c. London, 1680.

In the Memoirs of the Italian Society of Sciences of Modena for 1805,[*] there is a description of cholera by Leopold M. Caldani, which more closely corresponds to the catarrhal form of the disease than any of those we have already mentioned. He says "frequent, unexpected, and impetuous vomiting, accompanied with copious dejections, whereby an individual, although very fat, often becomes lean visibly, so that, reduced as it were to a skeleton, he quickly dies, sometimes with severe abdominal pains, at other times with violent convulsions or seized by syncope, constitute that terrible disease which physicians call cholera morbus, or simply cholera." He points out the impropriety of limiting the term cholera to those cases in which the evacuations are bilious, and adds some interesting cases which appeared to have been produced by unwholesome milk, and in which the evacuations resembled that fluid.

Many of the cases of the very remarkable disease which raged in the Milbank Penitentiary in 1823, and which have been so ably described by Dr. Latham, exactly resemble the catarrhal cholera; nay, we cannot hesitate to consider them as cases of that disease produced by a local cause; and it is therefore necessary to bear in mind that, should the epidemic influence extend to this country, there is nothing in the climate hostile to its existence, or capable of arresting its progress.

The disease also which occurred among the boys of Mr. Day's school at Clapham, in August 1829,[†] strongly resembled the catarrhal cholera in its symptoms, but dissections proved it to be different; for, instead of the peculiar diseased appearances which are always presented by the gastro-enteric mucous membrane in cholera subjects, and which will be found described in the following sections, the mucous glands of these membranes in the fatal cases at Clapham were enlarged, giving an appearance of tuberculation or pustulation. This disease was caused by foul air from a drain which had been opened near the house, and was of a similar nature to the morbus mucosus, as described by Rœderer and Wagler,[*] which raged at Vienna sixty or seventy years ago. The only analogy which exists between these diseases and cholera is, that they have their seat in the same membrane; but the diseased action is evidently different, as shewn by the secretions which are the result of it; and the enlargement of the mucous glands, which appears to be the proximate cause of the morbus mucosus, has not been observed in cholera.

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[*] Memorie di Matematica e di Fisica della Societa Italiana della Serenze, tomo 12, parte 2do, in 4to. Modena, 1805. Pp. 204, 224.

[†] See London Medical Gazette, August 1829.

In New York, and indeed generally in the southern parts of the United States of North America, a disease exactly similar to the milder forms of the catarrhal cholera, is prevalent during the summer and autumn. It usually makes its attack at night, consists of vomiting and purging of thin watery fluids without bile, and produces sudden and great collapse, with cold skin. It has never occurred there as an epidemic, and is in general easily overcome (if combatted in time) by means of large doses of laudanum.[†]

I cannot finish this historical sketch without calling my reader's attention to the following remarkable points of analogy which are observable between different epidemic diseases. 1. Most of them are seated in the mucous membranes. An inflammatory catarrh of the air-passages, accompanied in some instances by looseness of the bowels, occurred as an epidemic throughout nearly the whole of Europe in 1580;[‡] another of a similar nature spread over a great part of Europe in 1782;[§] and the well-known influenza of 1803 consisted of a catarrh, with inflammation of the mucous membrane of the air-passages.[||] 2. Epidemics have generally proceeded from the east to the west, which was the case with the peste noire, with the catarrh of 1782, with the influenza of 1803, which is said to have stretched from the confines of China to the shores of the Atlantic, and thence across to North America; and the same course is now pursued by the epidemic cholera. 3. All epidemics present the same capricious irregular characters in the mode of their propagation, sparing one spot to appear in a more distant one, following a zigzag course, suddenly stopping, and as suddenly and unexpectedly reappearing, proceeding sometimes slowly, sometimes rapidly, and so forth.[*]

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[*] Rœdereri et Wagleri, Tractatus de Morbo Mucoso.

[†] I am indebted for this information to Dr. Revere, whose distinguished talents and long experience in the United States give to his observations the highest value.

[‡] Schneider de Catarrhis, lib. iv. cap. 5.

[||] See Hamilton's Description of the Influenza in 1782.

[§] Numerous other instances might be stated, did our limits permit: I need only refer to Sydenham's Epistolæ de Epidemicis, Parr's Medical Dictionary, Schneider de Catarrhis, Rœderer and Wagler.

The following conclusions appear to me naturally to arise out of the preceding details. 1st. That in almost all the European medical works, ancient as well as modern, we only find descriptions of the inflammatory and mixed forms of cholera; and that we must therefore conclude that these have, at all times, been the most prevalent kinds of the disease in this quarter of the globe. 2. That the catarrhal cholera (viz. that which is now gradually approaching from India,) has never before made its appearance in the form of an epidemic in Europe; but that sporadical cases have been occasionally observed and described in different European countries, and also in the United States of North America. 3. That epidemic cholera is not contagious,[†] but exactly resembles other epidemics in the mode of its propagation, and in its general features.

(To be continued.)

CONNEXION BETWEEN THE PLACENTA AND UTERUS.

Anatomical and Physiological Remarks on the Connexion between the Placenta and Uterus: on the Vascular Communications between these Organs, and the Mode in which their Fluids circulate. By M. E. A. LAUTH, fils, M.D.—*Repert. d'Anatomie et de Physiologie*, t. i. p. 226.[‡]

THE mode of union between the uterus and the placenta, and the reciprocal exchange of blood between the mother and the fœtus, have long excited the attention of anatomists and physiologists. Neither, however, have succeeded in giving us clear ideas of the structure of these parts, nor of the manner in which the functions that depend upon them are performed. When the discovery of the circulation of the blood was made, an intermediate parenchyma was admitted to exist between the uterus and the placenta, at the extremities of the arteries and the commencement of the veins, as in all other parts of the body. But microscopic observations and injections having demonstrated the non-existence of a parenchyma in the rest of the body, it was inferred, from analogy, that there was an immediate continuation of the uterine arteries into the veins of the placenta, and of the arteries of the placenta into the veins of the uterus. It was soon found, however, that it was impossible to inject the vessels of the fœtus through those of the mother, and *vice versâ*. The injection thrown into the arteries was always arrested between the placenta and uterus, and formed extravasations, more or less considerable, in the interstice between these two organs, when it had been thrown in with too much force; or it returned by the veins if the injection was sufficiently thin, and the operation carefully conducted. The frequent repetition of these experiments, and always with the same results, only rescued physiologists from one error, to plunge them into another. An immediate connexion between the vessels of the uterus and placenta was no longer admitted; it was now asserted that the arteries terminated by open orifices in the cells situated between the two organs, or in the uterine portion of the placenta, and that the veins there absorbed the effused blood; those of the placenta, to conduct it to the fœtus, and those of the uterus, to carry it back to the mother.

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[*] "Adeolento tracto morbi epidemici integras interdum regiones pervagantur, ut presso quasi pede eorum vestigia legere et consectari nobis liceat. Neque vero ventorum iter aut linearum quamdam rectam sed alios tramites, nondum satis extricabiles, lineamque obliquam sequuntur, factis interdum in progressu saltibus."—Rœdereri et Wagleri, *de Morbo Usu*, sect. 1.

[†] This important question shall be fully discussed in a future section.

[‡] We give the translation of M. LAUTH's paper, for the purpose of affording our readers an opportunity of comparing it with that of Dr. R. LEE, which we published in our number for July 1832, p. 71. Dr. GRANVILLE lately declared, at the Westminster Medical Society, that M. Lauth's paper was an "anticipated translation" of Dr. Lee's. We maintained then, and we still remain of the same opinion, notwithstanding Dr. Granville's "Parallel," (*Lancet*, March 23,) that there is no more similarity between these papers than must necessarily exist when two persons describe the appearances of the same thing which they have both carefully examined. It cannot escape observation, that the object of the two writers is essentially different.—EDITORS.

In the experiments I have made upon this subject, my first object was to examine what was to be understood by fœtal placenta and uterine placenta; portions which, according to modern anatomists, are composed of totally different vessels; the one being the prolongations of the uterine vessels, and the others nothing more than the expansion of the vessels which compose the umbilical cord. Notwithstanding the most minute examinations, I could not discover these two portions, unless the term uterine placenta is applied to that portion of the membrana decidua to which the placenta has become adherent, and which, after its more or less complete separation from the uterus, is expelled with the placenta, the external surface of which it covers. The formation of the membrana decidua in the uterus before the descent of the ovum into that viscus, and even independently of its descent in cases of extra-uterine pregnancy, proves that it is a production of the womb, and that, though the placenta subsequently forms adhesions with the decidua, it ought not to be considered as forming a body with it, or as constituting its uterine portion.

There does not, then, exist a uterine placenta, such as it has hitherto been described. The membrana decidua, like most false membranes, when it becomes organized, receives numerous vessels, which are the continuations of the uterine vessels, or which are, at least, in direct communication with them; and, as in all other parts of the body, the final extremities of the arteries are there reflected upon themselves to form the commencement of the veins. The placenta is entirely composed of the successive division of the umbilical arteries upon the chorion, which arteries, having arrived at the extremities of the villosities which cover the chorion, are reflected upon themselves to give origin to the veins, and the trunk which results from their reunion is the umbilical vein. I have frequently seen, without the assistance of the microscope, this termination of the arteries in the veins, in human and animal placentas, of which the blood-vessels had been previously injected. The artery turns abruptly upon itself, to be changed into a vein, in such a manner as to form a very small arch. The termination of the arteries in the veins of the placenta may easily be seen by the injection of a thin liquid, as coloured water, which is readily made to pass from one order of vessels into the other. These blood-vessels of the placenta have no direct communication with those of the membrana decidua. No one has ever succeeded in injecting the one through the other, however subtle might be the nature of the injecting liquid that was employed. It is very easy to repeat this experiment upon the placenta, provided it is not torn nor injured: not an atom of the injected matter will penetrate into the vessels of the decidua which covers it, and there will be no injection extravasated, unless sufficient violence has been used to tear the parts.

This experiment proves, at the same time, that the passage of the blood of the mother to the fœtus cannot be effected by means of what have been called the absorbing radicles of veins, as these would necessarily be torn in a placenta detached from the uterus, and the injected matter would be extravasated, which we have just seen is not the case; but that the transmission of the blood is effected by means of particular vessels, in the interior of which there are valves which only permit the blood to enter under certain circumstances, and under the influence of vital laws.

In carefully examining a placenta still covered by the decidua, we see that these two parts are united together by a multitude of small transparent vessels, which run from the one to the other. These vessels cannot be injected through the placental vessels, nor through those of the decidua; but a fine tube, introduced into either, enables us to fill sometimes the vessels of the placenta, and sometimes those of the decidua. Hence it follows, 1st, that there are two orders of these vessels, the one belonging to the membrana decidua, and consequently to the uterus, and the other to the placenta; 2d, that they are not blood-vessels; and, 3d, that they terminate, the one order in the blood-vessels of the decidua, and the other in those of the placenta, by orifices furnished with valves, which prevent their being injected in a retrograde way. The vessels of which I speak can only be lymphatic branches, of which they present all the characters: they do not, however, appear to be connected with the general lymphatic system, because they are grafted upon temporary organs, with which they are expelled when the placenta is removed from the uterus.

As to the cells which are described between the uterus and placenta, or in the uterine portion of the latter, where the arteries terminate, and where the veins arise to absorb the blood there effused, I have never been able to discover them, notwithstanding the attention with which I have made my examinations. The circumstance which may have given rise to the belief of the existence of these cells is the occasional formation of extravasations of the injected matter between the two organs; but these extravasations arise from the separation of the placenta and the membrana decidua, and the rupture of the vessels which unite it to the uterus; and they are sometimes so extensive as to leave the placenta adhering to the uterus by its edges alone. And it is also probable that blood-vessels, very much dilated, as is the case in all organs the vital properties of which are preternaturally excited, have been taken for cells.

As it is now proved that there is no direct communication between the uterine and placental vessels, and as we have just stated that the cells in which the blood would be effused do not exist, the only communication we can admit between the mother and the fœtus is that by lymphatic vessels, which have been described above, and some of which terminate in the vessels of the placenta, and others in those of the membrana decidua, which are themselves nothing more than prolongations of the uterine vessels. These lymphatics, which terminate in the blood-vessels of one of these organs, appear to be engrafted by their origins on those of the other; and thus those which arise from the uterine vessels, and which terminate in the vessels of the placenta, extract from the blood of the mother the materials which are fitted to enter into the composition of the blood of the fœtus. The fœtal blood is elaborated and accommodated to the wants of the fœtus as it passes through the liver, where it appears to receive an arterial character. On the other hand, the lymphatic radicles grafted upon the vessels of the placenta terminate in the uterine vessels, and serve to remove from the blood of the fœtus the materials which are no longer useful, or which might become injurious to it, and to convey them into the venous system of the mother.

Certain arguments also tend to support this opinion. The difference that exists between the movements of the blood in the mother and in the fœtus, appears to prove that their sanguineous systems are connected together by a totally different order of vessels. The same conclusion must be drawn from the reciprocal independence which exists in the health of the mother and that of the fœtus. Experience teaches us that an unhealthy mother may bring into the world a healthy and robust child; that the mother may be affected with syphilis, or smallpox, without the child being affected; and, on the other hand, that the child may be born with various diseases from which the mother is perfectly free. I think it must be admitted, without incurring the reproach of humoral doctrines, that in all these cases the blood which has passed from one individual to another, must have undergone essential modifications, and must have been changed by absorbent vessels, by some mechanism analogous to that by virtue of which a portion of the chymous mass, for example, is transformed into chyle by passing through the lacteals. The analogy furnished by the examination of the incubated egg, forms an additional proof that the new being does not derive its development from the successive addition of portions of blood already formed, but that the blood is elaborated by the embryo itself, or by its dependencies, and that it secretes from the surrounding nutritive substance the necessary materials for the composition of the blood.*

The last argument I shall adduce in support of this opinion is the experiment of the transfusion of blood, which shews that the blood of one individual cannot be altogether suitable for another, as is proved by the serious symptoms which have followed this operation. The losses which the body sustains cannot be repaired by the simple addition of a certain quantity of blood: it is necessary that the mass of the blood should be augmented by a fluid elaborated by lymphatic vessels; vessels which are found in the placenta before birth, and which after birth are replaced by those of the intestines, the lacteals.

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* Some recent microscopical experiments have shewn that the globules of blood of the mother do not resemble those of the fœtus. G. B., *Repert. d'Anat.*

We see then, *en resumé*, that the union of the placenta with the uterus is formed by vessels which are not blood-vessels, and which present all the characters of lymphatics; that the function in question is a positive act of absorption; that this absorption cannot take place by means of veins, because venous absorption, if it exists at all, only takes place by transudation; and that, consequently, this function must be performed by the vessels I have described, because no other than vessels of the lymphatic kind are capable of modifying the blood of the mother so as to accommodate it to the wants of the fœtus; and, lastly, that the placenta appears to fulfil in the fœtus the functions which are subsequently performed by the intestinal canal, rather than the functions of lungs, which have been hitherto attributed to it.

INFANTICIDE.

Additional Remarks upon Infanticide. By Alfred S. Taylor, Esq., Lecturer on Medical Jurisprudence and Chemistry in Guy's Hospital.

At the conclusion of the last paper upon the subject, it was remarked that, among the objections urged by Dr. Hunter against the employment of the hydrostatic test in cases of suspected infanticide, was the following; the air, to which the lungs owe their buoyancy, may be contained within the natural air-vesicles; and yet it may have resulted not from the act of respiration having been performed, but from the circumstance of attempts having been made to resuscitate the child, if found in a state of asphyxia, by inflating them artificially.

Eschenbach, and some other medical jurists, have considered that the supposition of an attempt of this nature being made by the mother is altogether inadmissible; but this, perhaps, is taking an extreme view of the case; for it is equal to assuming that every female who conceals the birth of her child, and is accused of having destroyed it, is really the murderer of her offspring. It certainly is improbable that a female, immediately after delivery, should possess either strength of body or presence of mind sufficient to perform this experiment; and it is obvious that, unless the inflation be properly conducted, *i. e.* unless the external orifices of the nostrils be closed, and a certain pressure be at the same time exerted, by forcing the larynx against the œsophagus, it will be much more likely that the stomach should be inflated than the lungs. But, setting aside the improbability which the assumption carries with it, we will suppose that a woman is secretly delivered of a stillborn child; that she attempts to restore it to life by blowing air into its mouth; that her efforts to restore it prove ineffectual; and that she secretly disposes of the body of the child, in order to remove all ground for suspicion.

The body of the child being found, is given over for inspection to a medical practitioner; and he is required to state, at the inquest, whether the child had been born alive; *i. e.* whether it had respired after having been delivered. He finds the body altogether free from putrefaction,* the viscera of the thorax perfectly healthy, the lungs distended, projecting forwards, crepitating to the finger, slightly overlapping the pericardium, and presenting on their surface irregular patches of a pinkish-red colour. On placing them in water, he finds that they readily float, even when divided into smaller portions; although it is not improbable that some of these portions will be found to sink, since it is almost impossible, even by long-continued efforts at inflation, to distend these organs with air equally throughout their whole structure.

He has now, then, to determine whether the buoyancy of the portions of lung which float be owing to air introduced naturally or artificially; and this will lead him at once to put in practice those means which have been suggested to obviate the difficulty contained in this objection.

1st. If the experiment of inflating the lungs be performed upon these organs when removed from the thorax, the results will be more complete than where the inflation is performed while they are still contained within their proper cavity. It will be found, then, upon the first introduction of air, that they suddenly undergo a remarkable alteration of colour in certain situations only. I have generally observed that the apices and anterior margins have been the first parts to present these changes: they became of a bright pinkish-red colour, and in that way contrast strongly with the uninflated portions of the organs, which retain the black livid hue peculiar to the lungs of the stillborn child. By continuing the inflation, they may be made to acquire this bright colour over the whole of their surface; but it is rare that, on making a section into their interior, we find an equal uniformity of colour. Judging from my own observations, I should be inclined to think that it would be impossible to produce this appearance in the lungs of a stillborn child, while retained within the cavity of the thorax; and therefore under the circumstances upon which the "objection" is raised. In all the experiments which I have performed upon the lungs of such subjects, when removed from the body, I have never failed to observe, even where considerable force was used in inflating the organs, and the operation was long continued, that their internal structure had become very unequally acted on by the air introduced, although their external surface appeared tolerably uniform in colour. I have found, upon making a section, that their substance was more or less mottled; that small patches of a livid colour, corresponding to parts not acted on by the air, intervened between the streaks of bright-red. This result is one for which we may be prepared, when we consider the manner in which the air is introduced. It has to overcome, in this case, the inertia of the dense mass into which it is propelled; and hence it will find its way only into those parts where it meets with the least resistance.

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* It is here assumed that the body is free from all signs of putrefaction, in order to make the question less complex. Where the lungs are not putrefied, it must necessarily follow that the air contained within their structure has been introduced either *artificially* by inflation, or *naturally* by the process of respiration.

In the case of natural respiration, the phenomena are widely different:* the lungs are uniform in colour, whether we look at the surface, or make a section through their substance. The air, in fact, is equally diffused throughout their whole structure; a phenomenon which is readily explicable when we consider that the inertia of the lungs is in this case overcome by the action of the respiratory muscles, and that the air enters as into a species of vacuum. If these observations should be borne out by the results obtained in future investigations, it will follow that the examiner may determine, by a careful inspection of the organs, whether the air, to which the lungs owe their buoyancy, has resulted from artificial inflation, or from the act of respiration. But there are other means left open to us, by which we may corroborate our conclusions respecting the source from which the air has been derived.

2d. The principles of the test recommended by PLOUCQUET have been already explained. It has been remarked, that the effect of respiration is not only to render the lungs buoyant in water, but to increase their absolute weight. This results from the altered course of the blood; the whole of that fluid contained in the ramifications of the pulmonary artery augmenting the weight of the organs. Ploucquet established a proportion, both for fœtuses which had respired and for others which had not; but the observations of CHAUSSIER and SCHMILT have tended, in the opinion of many, to invalidate his conclusions. It is certain that very varying results have been obtained; but it may be observed, that in the experiments sufficient attention does not appear to have been paid to two points: 1st, to the age of the fœtus; and 2dly, to the degree to which respiration has taken place. No inferences should be drawn either for or against the accuracy of this test, unless the experiments which have led to them have been performed upon fœtuses advanced to the same period of gestation. There may be variations in development at different ages, which may probably have given rise to the extreme variations obtained by experimentalists. It is admitted that there may be a difference in the degree of development of the body in fœtuses of the same age; but it is more than probable that this has far less influence on the results obtained by the test of Ploucquet, than the degree to which respiration has advanced. In many children, the function is but slowly and gradually established; and, therefore, in these it is not to be expected that the pulmonary circulation should be complete. In a few children which have died almost immediately after birth, where they have only lived to make one or two inspirations, it has been found that the circulation through the pulmonary vessels was by no means perfectly established. In both of these cases, the results afforded by Ploucquet's test must deviate from the average; and the deviation will be great, in proportion to the imperfect manner in which the process of respiration has been carried on.

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* I here presume, that the process has been fully and perfectly performed, and that the lungs are free from all morbid changes.

I will here, however, suppose that the lungs are completely distended with air, and are universally crepitating to the feel. We apply the test of Ploucquet, and find that we obtain a proportion of about 1 to 60.* Our conclusion then will be, that the air has not resulted from respiration, but that it has been introduced artificially. In the latter case, of course, there cannot possibly be any augmentation of weight; since this augmentation in every instance is owing entirely to the altered course of the circulation; and thus, as in the case of the

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* The proportion of 1 : 60 in the weight of the lungs and body before respiration, appears to be nearer to the truth than the proportion given by Ploucquet. This I have deduced as the mean of numerous observations made upon stillborn fœtuses arrived at the full period. After respiration, the proportion may be taken as 1 : 38.

"objection" from putrefaction, we have a means of determining the accuracy of our previous conclusion.

3dly. It was proposed by **Beclard**, some years since, to try the effect of compression in cases of a suspected nature. He stated that where the air was introduced artificially, *i. e.* by inflation, it might be readily expelled by simple compression of the organs. This experiment I have frequently had occasion to perform; and in no case have I been unsuccessful in my attempts at expelling the air, even where the inflation had been carried to the most extreme degree. The experiment may be best performed by enclosing the lung, either entire or divided into four or five pieces, in cloth, and twisting the ends of the cloth in opposite directions. A moderate degree of force will suffice to expel the air, and, on placing the lung in water, after the experiment, it will be found to sink. I have almost invariably observed on these occasions, that from being of a pinkish red colour, it passed to the dark livid hue which it had prior to inflation; and that it is by no means necessary to exert a degree of pressure sufficient to lacerate its structure, or disorganize it, in order to effect the entire expulsion of the air.

If we treat a healthy lung, which has fully undergone the process of respiration, in this manner, we shall find that the results will be widely different. No pressure will, so far as I have seen, suffice to expel the air, if derived from respiration. A portion may be expelled; but, so long as the interstitial structure of the lungs remains uninjured, sufficient will always be retained to preserve its buoyancy. In this simple experiment, we have then a very certain means of determining whether the buoyancy of the lungs be owing to the presence of respired air, or not.

But it may be urged, it is possible that respiration may have been so imperfectly conducted as that respired air may be expelled by the same degree of compression. This objection, however, has more plausibility than truth, as the following case, which is of recent occurrence, will prove. In the first communication which I made to this Journal on the subject of Infanticide, I represented myself as doubting what might be the result of compression upon lungs which had but imperfectly undergone respiration. I had not then succeeded in getting a fair case from which I could draw any legitimate conclusion respecting this point; but I flatter myself that the following, which presented itself to me by accident, will be considered as such.

On the 16th March, I examined the body of a child, which it had been found necessary to destroy in order to effect delivery. It lived, however, a sufficient time after the protrusion of its head to cry loudly, and therefore to exert its respiratory muscles.

The general appearance of the body shewed that the child had attained to the full period of gestation. On opening the thorax, the lungs were found projecting slightly forward over the pericardium, of a light-reddish colour, but giving no sense of crepitation to the finger. They had the external physical characters which these organs are known to have in children which have respired after birth; but the absence of all crepitation proved that the respiratory act could not have been perfectly performed. The colour of the external surface of the organs was perfectly uniform; a condition which I have never witnessed in lungs artificially inflated, except in those cases where the inflation had been carried to its most extreme degree, and where, therefore, a distinct feeling of crepitus invariably existed.

The lungs, being now removed from the thorax, were placed in a vessel of water, with the heart attached; and it was observed that they floated freely, immediately on a level with the fluid. The heart was now detached; and it was remarked, on separating the lungs by dividing the bronchi, that each lung floated equally well. A section was now made through the right lung, when it was found that the colour was uniform throughout; that the minute vesicles of air could not be perceived; and it was only by compressing the divided surface that any could be forced out. The right lung was then divided into sixteen pieces; and four of these pieces were forcibly compressed in a folded cloth; but it was found impossible to expel the air sufficiently to make them sink. They were divided into still smaller pieces, and again violently compressed with a force sufficient to rupture the cloth through several folds; but, on placing them in water, they still floated. They were again subdivided, when it was found that the air which they had hitherto retained was expelled; they therefore sunk in water, but the texture of the organ was entirely destroyed; and, indeed, was reduced to that state to which the healthy lung of an adult person would have been reduced by repeated hammering.

Upon subjecting the left lung entire to violent compression, it was found impossible to expel the air so as to cause it to sink.

Ploucquet's test could not in this case lead to any correct inferences, since the greater part of the cerebrum had been evacuated.

Now here, then, we have probably as striking an example of the effect of imperfect respiration on the lungs of a full-grown child as could be well conceived; for the child could not, at the utmost, have made more than one or two inspirations, according to the testimony of the accoucheur; its death was almost contemporaneous with its birth. Let us imagine, for a moment, that this had been a doubtful case; one in which it was required to know whether the air contained in the lungs had been derived from the act of respiration, or whether it had proceeded from attempts at artificial inflation. The uniformity of colour observed not only upon the surface of the organs, but throughout their whole substance, as well as the impossibility of expelling the air by compression, without absolutely reducing the divided portions to the state of pulp, are conditions which, to my mind, would have afforded the most satisfactory evidence that the child had performed the act of respiration. If we derive our conclusions from the compression of either lung, while entire, instead of dividing it into separate portions, the evidence will undoubtedly be still more satisfactory, at least, so far as my own observations extend; for, allowing the organ to be healthy and fully distended, in no instance have I failed in expelling the air by compression, where it had been artificially introduced; and, on the other hand, in no instance has it been possible for me to expel it, where it had resulted from the establishment of the process of respiration.

It may be, perhaps, considered by some that the above inferences have been too hastily drawn, and involve questions too important to be thus hastily dismissed; but the results are open to correction, and my great object will have been attained if I should succeed in drawing the attention of any member of the profession to this subject, and thereby lead them to the performance of experiments, in order to confirm or invalidate the results at which I have arrived; but, in the meantime, I may be allowed to conclude, with regard to this objection to the employment of the hydrostatic test, that

1st. Where the lungs are crepitating to the finger, and uniformly of a pinkish-red colour, both superficially and internally, the air-vesicles being at the same time invisible;

2d. Where the test of Ploucquet gives the ratio of the weight of the lungs to the weight of the body as about 1 : 35;

3dly. Where the most violent and repeated compression is insufficient to expel the air from the organ, or to cause it to sink in water;

We have the strongest evidence that the air contained within the pulmonary cells has been introduced by the act of respiration: and, on the other hand, that,

1st. Where the colour of the lungs is not uniform throughout the mass, where dark livid patches are surrounded by bright red streaks, unequally distributed;

2d. Where the test of Ploucquet gives the ratio of about 1 to 60, in comparing the weight of the lungs and of the body; and

3d. Where, by moderate compression, we are able to expel the air, to cause the organ to assume a uniformly livid colour, and at the same time to deprive it of its buoyancy in water;

We have the strongest reason to conclude that the air which was contained within their structure had been introduced by artificial inflation.

In pursuing the subject, we find the following statement made by Dr. Hunter:

"If the child makes but one gasp, and instantly dies, the lungs will swim in water, as readily as if it had breathed longer, and had then been strangled."*

The question as to whether the child had been strangled or not, has nothing to do with the swimming of its lungs in water; because those who advocate the employment of the hydrostatic test, in cases of infanticide, do not look upon the floating of the lungs as any indication of the child's having been murdered, although Dr. H. invariably unites the two questions. We may therefore direct our attention merely to the first part of his proposition.

That a healthy full-grown child may, by one or two inspirations, so distend its lungs with air as to render them freely buoyant in water, is undoubted: the case which was just now cited for another purpose, may be taken as a clear proof of the fact. But, nevertheless, it would seem that, in some instances, a considerable time is required in order that the lungs should become perfectly dilated by the act of respiration. This has been more particularly observed in regard to children born before the full term, and in those which have been exposed to cold and inanition. In one instance, however, I have met with a case where, even after the lapse of six months from the time of birth, the lungs had not become fully inflated.

It was the case of a child, aged six months, which was supposed to have died by suffocation. Upon opening the thorax, the viscera were found perfectly healthy, but the whole of the inferior lobe of the right lung was, so far as regarded colour, density, and structure, precisely like the lungs of the fœtus. No air had ever penetrated into it, and the line of demarcation by which it was separated from the lobe adjoining it precisely corresponded to the line of separation between the two. It had become developed in size, and there was no appearance of disease. When the whole of the lung was placed in water it floated; but, when the inferior lobe was separated from the others, it immediately sunk to the bottom of the vessel.

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* On the Uncertainty of the Signs of Murder, &c., p. 33.

I shall hereafter have occasion to revert to this condition of the lungs, occasionally met with in newly-born children; but, granting the proposition made by Dr. Hunter, that "if the child makes but one gasp, and dies," its lungs will swim in water as readily as if it had lived longer, it remains to be inquired how this is to affect the application of the "test" in cases of infanticide.

The reader will at once perceive that it has no reference whatever to the question at issue. The point to be determined by it is, whether the child has respired or not after its birth; for the act of respiration is taken by the law as synonymous with life. If this be proved, and it be further shewn that the child has been really strangled by its mother, or any other person, it imports but little, in the eye of the law, whether the child has made but *one gasp*, or more, prior to its having been murdered; for it is not necessary that the child should respire for a certain period, in order that its destruction should amount to murder, or, otherwise, trials for infanticide would never be heard of in a court of justice; and the application of the hydrostatic test, as well as of every other test, might be very properly abandoned!

Dr. Hunter further observes, that "a child will very commonly breathe as soon as its mouth is born, or protruded from the mother, and in that case may lose its life before its body be born; especially when there happens to be a considerable interval of time between what we may call the birth of the child's head and the protrusion of the body: and if this may happen where the best assistance is at hand, it is still more likely to happen where there is none."

The fact alleged by Dr. Hunter relative to the establishment of respiration before the child is perfectly born, cannot be disputed. It is a matter of daily experience; but a child can rarely perish under these circumstancess, unless accidentally suffocated by the clothes, or intentionally destroyed. Indeed, it has been well observed, that the fact of the establishment of the process of respiration in the child is sufficient to guarantee it from the influence of the ordinary causes of death, by which children, during birth, are liable to be cut off; such as interrupted circulation, by pressure on the cord, &c. But, granting that the child may breathe while in this position, and die prior to the completion of delivery, the application of the hydrostatic test will indicate that it has respired; but certainly it will not indicate whether the act of respiration has taken place prior or subsequent to its complete birth. This must ever remain a question of presumption; and it is well for the constitution of society that the crime of infanticide is not made to rest upon proofs of this fact.

The buoyancy of the lungs will here, as in every other case, prove that the child has breathed; but it will not prove that it has been murdered. Let us suppose, however, that there are evident marks of manual violence about a child, and that there are strong proofs that the mother has really murdered it. Let us also imagine that the hydrostatic test shews most clearly that the child has performed the act of respiration, we may naturally stop to inquire whether the law insists upon proof of the act having been performed after its complete birth, in order that the mother should be proceeded against upon the charge of infanticide. This is the substance of the difficulty involved in Dr. Hunter's proposition; a difficulty which does not in the least operate against the results obtained by the employment of the hydrostatic test, but affects only the interpretation put by the law upon the term "infanticide."

We may look in vain into the works of our chief legal authorities for a correct definition of the crime of infanticide. It is commonly called "child-murder;" but the exact period at which the offspring is considered to become a child is not stated. It would appear, from the ordinary proceedings on trials for infanticide, that the complete birth of the child, and its entire separation from the mother, should be proved before the charge could be maintained; or, otherwise, how are we to understand why counsel should almost invariably ask the medical witness whether a child might not breathe and die prior to its birth? as if this had anything more to do with the question of its wilful destruction, than where the witness was expressly required to state whether a child might not breathe and die after its birth? Let us suppose that a case occurs where the head of the child presents at the outlet, and the murderer destroys it by thrusting an instrument into its brain before it can possibly have respired, are we to look upon this as a crime or not? It certainly does not come within the legal definition of criminal abortion; and it is almost equally certain that the murderer would escape a conviction, if tried for infanticide. The law considers that the child has not lived unless it be proved to have respired, although, morally and physiologically speaking, an individual who destroys a child under these circumstances is as truly a murderer as one who destroys it after it has lived several days. Let us suppose, however, that the destruction of the child is not attempted until its head has escaped from the outlet, and until it has performed the act of respiration. In such a case, the medical witness might prove that the child had enjoyed life, and that it had been wilfully destroyed; but is it possible to imagine that the prisoner will be acquitted of the charge, unless the witness can distinctly swear whether the child had respired prior or subsequent to its separation from the mother? It would be a libel upon the common principles of justice to affirm it, since, if such a rule were rigidly insisted on, no conviction could ever take place in those cases where the child is destroyed soon after its birth!

The term "infanticide" ought to be applied to the destruction of the life of a child, either during or after its birth, and whether the act of respiration has been performed or not. If the law insist upon some proof of the child having respired, before it will allow of its having lived, the hydrostatic test may be usefully applied by the witness. If, however, it should require proof of the complete birth and separation of the child from its mother, even where respiration has clearly taken place, before it will admit of the charge of infanticide, it is requiring more than medical testimony can afford, and more than either reason or justice can demand.

Let us, on the other hand, allow to Dr. Hunter the inference which is to be drawn from his proposition, and let us admit that, in a clear case of infanticide, a counsel is justified by law in demanding of the medical witness, whether a child might not respire, and yet not be born alive, in order to exculpate the prisoner from a charge of murder; it must necessarily follow, at least in many instances, that there will be a want of evidence of the fact, in which case the accused party, however great the guilt or enormity of the crime, must be acquitted. In such a case, it will be evident that the escape of the accused cannot be attributed to any defect in the application of the hydrostatic test, or in the medical testimony generally, but to a kind of special pleading, tolerated in the law as an evil necessarily accompanying the dispensation of a vast proportion of good!

Some have gone farther than Dr. Hunter, and have stated that a child might breathe while its *head was in the uterus;* and others have said, that they have heard the child cry while in this situation, explaining the fact by stating that the mouth of the child presented at the dilated orifice of that organ. Most of these cases have about the same degree of authenticity as those recorded by LIVY the historian, of children being heard to laugh and weep before birth.* Some modern physiologists consider it as proved, that a child may respire while its head is still in the uterus, and that it may die prior to the completion of delivery; but, without admitting it as proved, we may allow it as possible; in which case, the same remarks are applicable as those already made upon the circumstance of respiration taking place while the head is at the outlet, and the body remains undelivered.

Some opponents to the hydrostatic test have stated that a child may be born, and live for a short period, and yet not respire; in which case, the results of experiments on the lungs would lead to the inference that it had been born dead. I have already, in a previous paper, referred to instances of this kind, of which two are recorded by WRISBERG, where the children were born enclosed in the membranes. In one of these, according to his statement, life was prolonged for seven minutes without respiration, and in the other for nine minutes. Whether we admit these cases of Wrisberg or not, we may admit the possibility of a child being born alive without respiring; at least, for the sake of seeing how far it can operate as an objection to the main subject of our inquiry. Now the application of the hydrostatic test can only inform us whether life, *in the legal sense of the term*, has existed in the offspring, *i. e.* whether respiration has taken place or not; and it is upon the *legal* and not upon the *physiological* acceptation of the term *life* that the whole of our inquiries respecting its utility must be based. It is, then, from a want of proper reflection upon the subject that such an objection has ever been raised to the employment of the hydrostatic test. It is rather to be considered as a censure upon the state of our law, which calls for a particular proof of vitality in *every* case; when life may be present, and yet such proof cannot be afforded. The act of respiration affords unequivocal evidence of the child having lived; but it is absurd to suppose that it is thereby inferred that a child may not, physiologically speaking, enjoy life without it. If the law will not hold an offender who murders a child during birth, and before respiration is established, to be guilty of murder, it is not probable that it will hold an individual to be guilty of infanticide who destroys the child *after* its birth and before it has respired. It has been considered, perhaps, as more conducive to the interests of humanity to regard every child which has not respired as stillborn; hence the circumstance of life existing in the offspring without the establishment of respiration, although physiologically certain, does not appear to be legally admissible.

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* It is mentioned by this historian, that in one instance the child, while in the uterus, was heard to utter the words "*io triumphe!*" Vide MAHON, *Médicine Legale*, tome ii.

Those who regard this as an objection to the use of the docimasia pulmonaris, may be called upon to bear in mind that an individual may die from the effects of poison, while, by our tests, we may be unable to discover the smallest trace of poison within his body after death! Would it not, however, be considered unreasonable, if a person were to contend that, because our means of research did not serve us in this case, we should therefore abandon the use of tests altogether; yet such is the very drift of this species of argument, whether the question be one of poisoning or of infanticide!

Again, it has been asserted that a child may be born alive, and respire; but, owing to the act of respiration having been feeble, or owing to the presence of disease in the organs, the lungs may not contain sufficient air to render them buoyant in water. We may therefore fall into the error of pronouncing a child which was born living to have been stillborn.

The influence thus attributed to disease is perhaps more imaginary than real, and may be dismissed in a very few words. The practitioner must, of course, be presumed to be able to distinguish between a healthy and a diseased state of the fœtal lungs. Now, it is not probable that disease will so affect the whole of the lungs as to render every part specifically heavier than water: hence, if, upon their being divided into pieces and placed in water, it be observed that some portions float, he will have to satisfy himself respecting the origin of the air which they contained, and may draw his inferences accordingly. If the sinking of some portions be owing, as supposed, to the effects of disease, this will be readily determined by simple inspection; and thus, all the difficulties of the case will vanish. If the whole of the organs be diseased, and not a single portion be found to float, it is clear that no evidence can be derived from them in that particular case!

The lungs, it is said, may also sink in water where the child has respired, and where their structure is perfectly healthy; for it is contended, respiration being a process which is in many instances but slowly established, it may be some time before sufficient air becomes introduced to render them buoyant in water. Cases of this kind have been collected by

Hunter, Morgagni, Haller, and others. Schenk relates an instance where an infant lived four days, and cried several times, whose lungs sunk in water; but it is probable that, if the particulars of this case be true, there was great disease of the organs. It has already been stated that this imperfect dilatation of the organs by respiration is chiefly met with in children that come into the world prematurely; and it is not improbable, as Dr. Hutchinson has suggested, that exposure to cold and want of food may also have an influence in retarding the process. Cases of this kind must, however, be considered as exceptions to the general rule. In the instance just now related, of the child destroyed by the accoucheur in order to bring about its delivery, I found that, although it could not have made more than one or two inspirations, the lungs floated as freely as if it had lived for many days; and that the most forcible efforts were insufficient to expel the air which they contained.

It may suffice to state, with regard to this objection, that it may be always set aside by making our experiments on those portions of the lungs which contain air; and the inferences thus obtained will be as conclusive as if we had had the whole of the organs to experiment on. We know that such a condition of the lungs as that indicated may occasionally exist; and therefore we may readily explain, in such a case, why the whole of the divided portions of the organs do not float.

This, then, concludes the examination of the objections which have been brought by various writers to the employment of the hydrostatic test, in cases of infanticide; and it remains for the professional witness to determine if possible, by experiment, the degree of validity to be attached to the answers which have been made respectively to each.

He is called to examine the body of a child, and he finds that the lungs freely float in water. If the body be not in a state of putrefaction, the floating of the lungs will prove either that they have been artificially inflated, or that the child has respired. If then it be found that the air contained is readily expelled by compression, and the other signs be present already enumerated under the head of artificial inflation, we must conclude that the air has been artificially introduced. Should it be found impossible to expel the air by compression, we have the clearest evidence that it has resulted from respiration, which may be corroborated by the presence of other concomitant signs.

If, however, the lungs should be found to sink in water, even when divided into small pieces, and the substance of the organs be at the same time perfectly healthy, we have the strongest evidence that the child has not lived to respire. If any of the divided portions contain sufficient air to render them buoyant, we have only to determine, according to the rules above given, whence that air has proceeded.

By the hydrostatic test, therefore, we only attempt to solve one question, namely, whether the child has respired or not; and it is a most serious mistake to suppose that the life of a woman depends upon the result of its application. The proofs of her guilt, if accused of having destroyed her offspring, will depend upon the concurrence and combination of many circumstances; and indeed, it is difficult to conceive of a case in which medical testimony would be alone sufficient for her conviction. The reverse, however, seems now to be the principle acted on. The medical witness has only to swear that the proofs of the child having lived (respired) after its birth are *unsatisfactory;* and the judge has only to declare that Dr. Hunter's opinion has settled the question relative to the employment of the hydrostatic test, when the accused, although there can be but little moral doubt of her guilt, is instantly acquitted.

It would appear invidious to cite cases in support of these statements, but the reports of every circuit will amply testify to their truth. How far such a state of things is reconcileable with the proper administration of justice, it is for the moral or political philosopher to determine; but he whose object is not, through a misplaced feeling of humanity, to shew favour to the guilty, but to uphold the authority of the law, cannot but regret that principles so mischievous should be tolerated, and that medical science should be the means by which they are enforced and perpetuated!

35, Great Marlborough street; April 22, 1833.

CASE OF LOBULATED POLYPUS OF THE OS UTERI.

To the Editors of the London Medical and Physical Journal.

Dear Sirs: As the following is not a very common case of polypus, it may be worthy of being shortly recorded.

Mrs. ——, æt. thirty-eight, was married at seventeen, and has had six children, the youngest of whom is now seven years of age. Two years ago she had a miscarriage, attended with rather a considerable degree of pain, hemorrhage, and followed by an abundant discharge for the succeeding six months; which about this time was much increased by the addition of a gonorrhœa; and her husband, who was a profligate fellow, inflicted, in addition, some manual injury upon the parts. The ardor urinæ, the discharge, the occasional losses of blood, and the excoriation of the adjacent parts, which were thus induced, continued for a period of eighteen months, and materially impaired her health.

I was requested, by Dr. Davies, on the 7th of November last, to ascertain, by examination, the cause of these symptoms, which had been found intractable under the ordinary methods of treatment. The polypus which I found consisted of several lobes, projecting about an inch into the vagina, and was attached to the posterior half of the circumference of the os uteri; the anterior half, and the cervix, being equally free from any unusual degree of induration or tenderness, and presenting none of the characters of a malignant disease. The form, however, and general characters of the tumor itself were considered by Drs. Davies and Lee to be of a very suspicious nature, especially as there was an evident ulceration on its anterior part, which occasioned the examination to be attended with more pain and hemorrhage than might have been anticipated from the examination of a common polypus.

The polypus being broadly based, and without any evident cervix, I was doubtful whether it would be practicable to employ the ligature; but, with the double canula, I experienced less difficulty than I expected. It was applied on the 12th of November, and came away on the 22d of the same month, without the production of a single unfavorable symptom. In about three weeks, the sore had healed, the discharge ceased, and the health of my patient was re-established. There remained, however, a permanent deficiency of substance on that side of the circumference of the os uteri, and, for some weeks afterwards, a considerable tenderness of the cervix.

I am not disposed to regard this case as affording any new light upon the subject of polypus; it only affords another proof of what is already generally known, namely, the propriety of making an early examination, the expediency of operating, and the facility and little inconvenience attending the operation; and, at the same time, that it may serve the purpose of future inquirers into the varieties of this disease.

J. F. Palmer,
Surgeon to the Westminster General Dispensary.

38, *Golden square.*

CRITICAL ANALYSES.

Quæ laudanda forent, et quæ culpanda, vicissim,
Illa prius, cretâ; mox hæc, carbone, *notamus*.—Persius.

New Views of the Process of Defecation, and their Application to the Pathology and Treatment of Diseases of the Stomach, Bowels, and other Organs; together with an Analytical Correction of Sir Charles Bell's Views respecting the Nerves of the Face. By James O'Beirne, m.d., Surgeon Extraordinary to the King, one of the Surgeons of the Richmond Surgical Hospital, Dublin, &c. &c. 8vo. pp. 286. Hodges and Smith, Dublin; Longman and Co., London; and Machlachlan and Stewart, Edinburgh.

The titles of books, like the features of men, are too frequently deceptive, and by no means honest indicators of the interior; but, as far as we know to the contrary, and we have taken some pains to ascertain the fact, Dr. O'Beirne satisfactorily fulfils the expectation held out in his title-page, and presents us with "new views," which are very ingenious in themselves, and *apparently* of more than ordinary value in their practical application. We have been so much gratified by the first perusal of his book, that we sit down with pleasure to go over it a second time, for the purpose of giving our readers an abstract of its contents. This is not often the case with reviewers; for, without the slightest disposition to depreciate the medical literature of the day, it is certain that in most cases the second reading of a work is performed as an act of duty, which is but rarely lightened by the wish of being still better acquainted with its pages. As Dr. O'B. affords us ample materials for occupying all the space we can devote to one subject, we proceed at once to our task of giving a condensed sketch of his views and practice; and we are much mistaken if the knowledge of the work which we shall convey will not lead the profession in general to place it in their libraries, or, at least, to peruse it with the attention it deserves.

Dr. O'Beirne commences by referring to certain "erroneous opinions" which are entertained respecting the filling of the rectum with feces, and the office of the sphincter ani, in the healthy condition of the bowels. Physiologists describe the fecal matter as passing freely from the sigmoid flexure of the colon into the rectum, and gradually distending the latter until, by its pressure, such a sense of uneasiness is communicated to the sphincter ani and muscles of the perineum as to rouse the diaphragm and abdominal muscles to effect its expulsion from the body. It is also believed that the power of retaining the feces, and controlling their discharge, depends exclusively upon the sphincter muscles of the anus. By facts and arguments, Dr. O'B. endeavours, and we think successfully, to shew that these opinions, venerable as they are rendered by time, are quite erroneous. It is admitted that a design to retard the progress of fecal matter, and to convert the large intestines into a depôt for its reception, is obvious throughout the intestinal canal, particularly in the cœcum and colon; and it must be manifest, he says, that if a free communication existed between the sigmoid flexure and the rectum, that design would fail to be accomplished at the point, of all others, at which it was most necessary to have secured its objects; for such an arrangement would necessarily expose the rectum to frequent accumulations, and such as, besides interfering with the ordinary functions of the bladder, would subject the sphincter ani to continued irritation, and thus deprive man of the advantage he enjoys of retaining the alvine contents for hours, or even days, without inconvenience. It is also urged, that the circumstance of nature forming one of her chief depôts for excremental matter in a part of the intestinal canal so close to and continuous with the rectum as the sigmoid flexure is, appears altogether inconsistent with the idea of a free passage between these portions of the canal. We cannot think that the author strengthens his argument by inferring "that the rectum, so far from being open, is firmly contracted and closed," because there is some difficulty felt in administering enemata, and because some force is generally required to discharge the fluid, from the resistance given to its passage upwards.

In answer to this line of argument, we answer, first, that there is generally but little difficulty in giving an enema; and what difficulty there is is sufficiently accounted for by the abrupt manner in which the gut passes over the edge of the sacrum, which juts out into the cavity of the pelvis at its junction with the vertebræ. Neither do we think it is "so exceedingly rare" as he states for the finger of the surgeon to be soiled with feces when he has to examine the state of the rectum. We must observe, too, that in examining bodies after death, we often find the rectum full of feces.

The following argument appears to us quite *ad rem*, and we know not how the facts can be accounted for without admitting the full force of the views Dr. O'B. inculcates.

"The two sphincter muscles of the anus are considerably weakened in the disease called prolapsus ani; in the operation for fistula in ano, these muscles are completely divided, and thereby wholly incapacitated, for a certain time, from acting as sphincters; not only these muscles, but also a portion of the rectum above them, are occasionally destroyed by venereal, cancerous, and other ulcerative processes; yet it rarely happens that the power of retaining the alvine contents is found to be at all impaired in any one of these cases. It is therefore manifest that this could not possibly occur if the passage into the rectum were as free as it is supposed to be, or if the power of retaining the feces, and regulating their discharge, depended solely on the sphincter muscles of the anus." (P. 6.)

We may add too, in the account of the operations performed by

LISFRANC, in which two inches and more of the lower portion of the rectum were removed, no mention was made by our Paris correspondent[*] of a subsequent involuntary discharge of the feces; and it cannot be supposed he would have neglected to mention so very important a fact. We believe that Mr. MAYO is the only English surgeon who has removed a portion of the rectum by excision, and in his case[†] the patient, whom we frequently saw at the time in the Middlesex Hospital, was able perfectly to retain solid feces in a short time after the operation, although there was prolapsus of the rectum. Now, in these cases it is very clear that there could be nothing equivalent to a sphincter muscle at the anus. By what means then were the feces retained?[‡] Desirous of testing the truth of the inferences drawn from the facts he adduces, Dr. O'B. was led to examine the rectum of a number of healthy persons, at different times in the same day, in order to ascertain its actual state, and, as nearly as possible, the time and manner in which it is filled.

"I proceeded in the following manner, and almost invariably obtained the following results. On passing a stomach-tube to the height of half an inch up the rectum, neither flatus nor feces escaped through it; passing it up about an inch and a half higher, it was still found that nothing escaped, but that it could be moved about freely in a space which, on introducing the finger, was ascertained to be what anatomists call the pouch of the rectum, in a perfectly open and empty state. From the highest part of the pouch to the upper extremity of the bowel, generally a distance of from six or seven to eight inches, it was found that the tube could not be passed upwards without meeting with considerable resistance, and using a degree of force sufficient to mechanically dilate the intestine, which was plainly felt to be contracted so as to leave no cavity for this extent. When the instrument reached, in this way, the uppermost point of the rectum, the resistance to its passage upwards was felt to be sensibly increased, until at length, by using a proportionate degree of pressure, it passed forward rapidly, and as if through a ring, more or less tight, into a space in which its extremity could be moved with great freedom; and as instantly a rush of flatus, of fluid feces, or of both, took place through the tube. In some instances, indeed, it happened that neither gaseous nor liquid matter escaped at this moment, but, in all these, the distinct feel of the extremity of the tube having entered a solid mass in the flexure was communicated to the hand: the instrument, on being withdrawn, exhibited a few inches of its upper extremity covered, and its eyes plugged up, with solid excrement; the person generally went to stool soon after, and passed a large quantity of solid feces. In every instance where the tube presented the least appearance of feces after being removed, this appearance was confined to that portion of its upper extremity which had entered the sigmoid flexure.

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[*] London Med. and Phys. Journal, Nov. 1828, p. 472.—REV.

[†] Ibid., April, p. 319, and June 1831, p. 510.—REV.

[‡] It is scarcely necessary to observe, that we are not here touching upon the question of the propriety or probable advantages of cutting away a portion of the rectum. The result of Mr. Mayo's case was far from favourable, although for some time its progress was very promising.—REV.

"In this way, I have also examined the rectum of healthy persons in a few minutes after they had passed a stool, and of others at the moment when they felt a moderate inclination to go to stool, and have ascertained that the rectum is in a perfectly empty and contracted state at both of these periods.

"The results of these examinations establish the correctness of the inferences drawn from a number of facts, but in a much more positive and precise manner, for they distinctly prove, first, that in the healthy and natural state, all that part of the rectum above its pouch, is at all times, with the single exception of a few minutes previous to evacuation of the bowels, firmly contracted and perfectly empty, at the same time that the pouch itself, and also the sigmoid flexure of the colon, are always more or less open and pervious; lastly, that the sphincter ani muscles are merely subsidiary agents in retaining the feces." (P. 6.)

At a subsequent part of the work, (p. 45,) the author refers to a fact which might appear to militate against his views. He admits that the rectum may be filled and impacted with hardened feces, and thus cause constipation. Such an occurrence, however, he considers rare, and is easily explained by the circumstances under which it has been observed; for it has never been met with in any but in paralytic, or in very aged, infirm, and sedentary persons. In such subjects, the muscles of the abdomen and perineum, and also the muscular coats of the rectum, participate in the weakly state of the rest of the muscular system; and, when the rectum is filled, neither the same sense of uneasiness, nor the same desire or power to evacuate, is felt, as in stronger or more healthy persons. From these causes, as well as from the listlessness which often leads persons of this description to resist the calls of nature, the bowel, instead of being emptied, and immediately afterwards contracting and closing in the natural way, is left in a more or less distended and open state, so as to no longer oppose sufficient resistance to the descent of the contents of the flexure.

These conditions of the sigmoid flexure and rectum in the healthy state are directly opposite to those in which these intestines are universally considered to be placed, and lead to views very different from those hitherto universally entertained of the physiology of the intestinal canal, and also of the pathology and treatment of intestinal diseases.

In order to remove all rational doubt respecting so important a point, as well as to prepare the way for giving a correct general view of the manner in which the contents are moved through and expelled from the alimentary tube, Dr. O'B. adverts to the structure and disposition of the parts in question, the sources from which they are supplied with nervous influence, and the nature of the functions they have to perform; and he contends they are such that these parts cannot be in any other than the conditions just mentioned. We cannot extract all the arguments he advances in support of this conclusion, and they are so connected with each other that an abridgment would be useless to the reader, and injurious to the author. For these details therefore the work itself must be consulted, as well as for the peculiar views entertained by him of the means and process by which the act of defecation is accomplished. Many facts and arguments are advanced, from which it appears very probable that, with the exception of the comparatively rare instances in which alvine obstruction is the consequence either of the cavity of the rectum being traversed by membranous filaments, impacted with indurated feces, filled by humours and other excrescences, or obliterated by the pressure of tumors, or of displaced or morbidly enlarged organs external to it, constipation is invariably an effect, and nothing more nor less than an effect of an unusually contracted and impervious condition of the rectum, produced by a more than usually firm and strong action of its own powerful and highly irritable muscular parietes, and maintained by a variety of favourable circumstances, which are explained in the work.

We must not pass over two facts which are of much importance in reference to Dr. O'B.'s views. We give them in his own words.

" While the small intestines can be said to have little more than one muscular coat, and the cæcum and colon but a similar, with the addition of three narrow longitudinal bands, the rectum possesses an internal coat composed of strong fleshy fibres set closely together, and arranged circularly, and an external composed of still stronger and more fleshy fibres arranged longitudinally, also set closely together, and so as to completely surround and cover the internal coat: in addition to these, each of the three longitudinal bands of the sigmoid flexure sends down strong fleshy fibres to be expanded upon and intermixed with those of the proper external coat. It is therefore both an anatomical and a physiological fact, that this intestine exceeds every other part of the intestinal canal in the number and strength of its muscular coats, and consequently in muscular power. Again, this intestine is the only portion of the intestinal canal into which we can trace branches from the regular spinal nerves going directly, and without previously interlacing with filaments of the sympathetic into its substance; for we can not only trace, but plainly see, that the right and left sacral plexus, which consists of nerves of this description, send the hæmorrhoidal branches in this manner to supply the rectum. It is also, therefore, both an anatomical and a physiological fact, that this is the only part of the intestinal canal which receives nerves directly from the motific and sensific columns of the spinal marrow; and, consequently, that a much higher order of irritability and sensibility is bestowed upon it than upon either the small intestines, the cæcum, or the colon, and that it is thus directly subjected to the influence, both healthy and morbid, of that all important organ." (P. 9.)

Having, by many very ingenious preliminary remarks, established, as he believes, the general cause of constipation, the author proceeds to consider its curative indications and treatment. In doing so, however, he confines his observations to the disease as it arises from ordinary causes, having before pointed out the manner of managing those cases which form exceptions to the general rule.

"Whenever constipation exists either as an independent affection, which, strictly speaking, can scarcely ever be the case, or as a symptom of other diseases, and whenever it is produced by common causes, it has been proved that the rectum is contracted so as to be rendered impervious, and that, at the same time, the whole of the cæcum and colon, and a portion of the small intestines, are distended with feces and flatus. Now, this being the state of these parts, it is as self-evident as the simplest proposition in nature can possibly be, that the great curative indication is to mechanically dilate the rectum so as to open and form a free communication with the colon, and thereby not only give exit but circulation to the matter so confined. This indication at once conducts us to a plan of treatment which will be found to exceed all others in the important points of safety, certainty, and expedition. This plan consists, as the reader must have long since anticipated, in the introduction of a large sized gum elastic tube through the anus into the sigmoid flexure of the colon, and after giving exit to such flatus and fluid feces as may happen to escape, adapting to it a proper syringe, and throwing up such purgative fluids as circumstances may make it necessary to select." (P. 54.)

As much will depend upon proper instruments being selected, we give the description of those employed by Dr. O'B.

"Of late years I have been in the habit of using an apparatus, which consists of two gum elastic tubes and a brass syringe, and may be described thus: one of the tubes is of the largest size, eighteen inches long, open at both ends, bulbous at the upper extremity, and has, at the lower, a brass ferule made to receive and accurately fit the short pipe at the end of the syringe. The other tube is by one-third shorter, and, in all respects, the same as that attached to the horizontal pipe of the stomach pump. The syringe has, on one side, a spring lever so constructed, that, when firmly pressed upon, it turns a simple stopcock, and forms a communication between the chamber and the short tube at the extremity, while it closes that which had previously existed between the chamber and the short tube situated at one side; in short, it is Weiss's syringe, as improved by the late William Lloyd, an obscure London artist, who added the spring lever, an addition which has perfected, and greatly increased the facility of working the instrument. The manner of preparing and using this apparatus is very simple." (P. 55.)

If, upon the introduction of the tube, the expulsive efforts be violent, which occasionally happens, we are to yield to them, and take advantage of their intermissions to pass it higher and higher. When it has reached the height of eight or nine inches, the opposition to its farther passage will be much increased; but the pressure upwards must be gradually increased until the resistance is completely overcome.* The moment that this occurs, the point of the instrument passes rapidly onwards, and as if through a very narrow ring, and the escape of either flatus or fluid feces, or of both, takes place, gives immediate and greater or less relief to the patient, and assures the operator that the upper extremity of the tube has entered the sigmoid flexure. But if neither flatus nor fluid feces should escape at this time, the instrument is blocked up with a mass of solid feces. The next step is to throw up the injection. When the tube is withdrawn, a copious and often enormous stool is discharged.

Dr. O'B. assures us that little or no pain is caused by this practice, and that there is no danger if the practitioner is adroit and cautious. He has now employed this treatment for more than nine years, "with the most decided and unexampled success," in almost every variety of disease attended with constipation, and frequently in very desperate cases, and where all other remedial means had completely failed.

"During the last four or five years, also, the practice has been employed by a number of medical men in this city, and in various parts of Ireland; and the reports of cases with which some of these gentlemen have favoured me, mention it in the highest terms of praise. It possesses, therefore, the great and unusual advantage of not coming before the profession in an infant or immature state, or merely on the authority of a single individual, but with all the maturity and weight of ample experience, and sanctioned by the open attestation of a number of eminent and highly respectable practitioners in its favour." (P. 66.)

Dr. O'B. next proceeds to support the doctrines he maintains, by giving detailed accounts of various cases in which the treatment arising from those doctrines proved eminently successful. He has very properly preferred cases of other practitioners to his own, as often as he could. Many of the cases are really exceedingly interesting. In several, the life of the patient was in the utmost jeopardy, and the rapid, and in some instances almost instantaneous relief that followed the practice recommended, leaves us no room to doubt that the happy result was wholly attributable to it.

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* In a note, the author gives an account of the various explanations which have been offered by various surgeons of the cause of this increased resistance at the upper extremity of the rectum. He denies the existence of valvular projections in the mucous membrane, which have been described by Dr. Houston,† and considers the resistance to arise from a spasmodic state of the rectum at this part.

† Dublin Hospital Reports, vol. v. A very brief notice of Dr. Houston's paper is given in our Journal for February 1831, p. 143.—Rev.

The first case mentioned was one of gouty metastasis to the stomach and bowels; the extremities were originally affected. For more than two days there was obstinate constipation. Enemata, given in the ordinary way, failed to produce any good effect. Dr. O'B. felt convinced that the obstinacy of the constipation depended, as he had previously ascertained in tetanus, on an imperviously contracted state of the rectum, and that the introduction of a gum elastic tube alone offered a chance of saving the patient's life. In this opinion Dr. Crampton concurred, and it was introduced in the manner abovementioned. When it had passed to the height of seven or eight inches, "an uninterrupted stream of limpid serous fluid flowed rapidly from the tube, to the amount of three imperial pints." The improvement in the patient was sudden, "and quite magical." She was restored to her usual health in a few days. This case is considered to be unexampled.

> "I have altogether failed in discovering an instance of gouty metastasis to the stomach or bowels, in which the mucous membranes of these parts took on, as in this case, the action of serous membranes, and produced an effusion of serum into the cavity of the digestive tube." (P. 72.)

This was one of the earliest cases in which the similarity of the circumstances attending the ordinary mode of administering an enema induced the suspicion, and confirmed the opinion, that the imperviously contracted state of the rectum, which Dr. O'B. had previously discovered to be the cause of the obstinate constipation which attends tetanus, was not peculiar to that disease, but common to the generality of the cases of constipation, and removable by the same means.

The next case mentioned was one of "spinal irritation." Obstinate constipation existed, and could not be conquered by the usual means. When this patient came under Dr. O'B.'s care, she stated that she had taken various purgative draughts, at least one hundred injections had been given, and that, notwithstanding, she had not had a stool of any kind, or passed even flatus per anum, for *nearly six months.* This extraordinary and almost incredible account was confirmed by other persons, who could have no object in practising deception. The treatment already described was had recourse to, and, upon the removal of the tube, "she passed one of the most enormous stools I have ever seen: it nearly filled a large-sized chamberpot, was altogether solid, perfectly natural-looking." For the further progress of this curious case we refer to the work.

Another case of spinal irritation is related principally to illustrate the effects produced by it on the rectum. Dr. O'B. refers those who may be anxious to acquire scientific views and sound practical information upon the subject of irritation of the spine, to the 63d and 64th volumes of this Journal, containing the highly interesting and instructive papers of Dr. W. and Mr. D. **Griffin**, of Limerick, to which we have had such frequent occasion to refer, and which have obtained their due meed of approbation not only in this country, but throughout the continent, as we perceive by the French, Italian, and German journals.

Dr. E. **M'Dowel** furnished the author with a case of *mania*, in which there was constipation of the bowels for several days. Purgatives and enemata were given without avail. Dr. O'B.'s plan was tried with immediate and decided relief. Dr. M'Dowel states that he "has frequently employed the tube to remove obstinate constipation, and uniformly with the most decided success."

Mr. **Richard Gregory** also, the surgeon of the Bellevue Lunatic Asylum, at Finglass, thus gives his opinion.

"As I have found that by far the greater number of the patients who enter the Belle-vue Lunatic Asylum, at Finglass, near this city, have been so obstinately constipated as to resist for a long time the most active and drastic medicines, I have latterly been in the habit of having recourse at once to the use of the tube, and never without immediate success." (P. 90.)

Narcotic Poisoning.—A boy was given, by mistake, a strong infusion of stramonium, and Dr. B. attributed his recovery to the repeated and free evacuations from his bowels, which were speedily procured by the use of the tube, &c.

"The stomach and the great nervous centres are all materially influenced by the state of the bowels; all narcotics are possessed of more or less of a constipating quality; and some portion of any poisonous substance taken into the stomach, must necessarily pass into the intestines, in order to see the urgent necessity of repeated evacuations per anum in cases of narcotic poisoning. Besides enabling us to effect this object with more certainty and expedition than by any other means, the introduction of the tube will enable us to inject vinegar and water, an infusion of coffee, or such other fluids as circumstances may render necessary, and so as to make them act upon a much greater extent of the surface of the large intestines, than could possibly be effected by any of the ordinary modes of proceeding. These are all advantages of the highest possible importance to the treatment of cases, in which life or death so often depends upon the promptness and energy with which proper measures are employed.

"These observations appear to be equally applicable to the treatment of other kinds of poisoning, but as I cannot speak from actual experience of the use of the tube in any of these, I shall refrain from indulging in mere speculation on the subject." (P. 95.)

Two cases of abdominal tumors are related, which afford additional proof of the efficacy of the practice.

Strangulated Hernia.—Dr. O'B. states that strangulation is always caused by the prolapsed portion of intestine becoming so distended, generally by the gaseous, and very rarely by the fluid or solid contents, as to be pressed forcibly against the margins of the opening or ring, and to be no longer capable of passing through it, and returning into its natural situation in the cavity of the abdomen. These points have been urged by various surgical authorities.

"But these, and all other writers, have failed to notice or to take advantage of another self-evident and very important fact respecting the condition of an intestine so situated; namely, the fact that strangulation can never be so tight or excessive as to prevent a more or less free passage of air through the hernial tumor. The very circumstance of strangulation being an effect of pressure exerted from within, not to speak of the exceedingly subtle and permeating quality of air, and the force with which it acts, would even show that in such cases the gaseous contents must circulate with considerable freedom." (P. 108.)

It is obvious that the volume of an intestine so situated must be diminished to a certain extent before reduction can be effected; and, when the taxis has failed, the tumor perhaps being tense and painful, and constitutional symptoms urgent, it becomes an important inquiry to consider how far the other means generally employed to reduce the volume of the hernia are capable of answering that purpose; and, if they are not, whether there are any means left untried which would effect it, and rescue the patient from the operation.

The remarks offered by the author respecting the effect of the remedies ordinarily had recourse to for the purpose of reducing strangulated hernia, are ingenious, and not without originality: we shall give them as fully as our limits permit. He admits that ice, and other refrigerating means, are well calculated to lower the temperature of the part, and to condense its rarefied gaseous contents; but, as the intestinal canal is so constructed as to be always nearly filled with air, and as air passes freely in and out of the prolapsed intestine, it is obvious, he argues, that in proportion as the gaseous contents of the tumor become condensed, the space so created will be occupied by flatus coming from the intestines within the abdomen, and that the protruded intestine will thus be left fully as large and as distended as before. "Hence it is that refrigerant applications have so often failed in effecting the objects for which they were employed." Bleeding and tobacco are considered by the author as objectionable means of effecting reduction. In young, weakly, and aged persons, extensive depletion is not free from danger, and it very often fails. Tobacco is liable to the same objections.

"The question therefore proposes itself, is there any other more certain mode of accomplishing this object, that has not been either proposed or tried, and that is, at the same time, free from all objection? It appears to me that there is. It is this. To introduce a gum elastic tube into the colon, and to leave it there until the large intestines, and eventually the hernial tumor, are emptied of their gaseous contents. If the bowels happened to be well freed, or to contain but a small portion of solid feces, at the time the strangulation took place, success might reasonably be expected from this mode of proceeding; and if they happened to be loaded with solid matter at that time, it would only be necessary to introduce the tube more frequently, and at intervals of a few minutes between each introduction, first, to empty the sigmoid flexure, secondly, the cæcum, thirdly, the hernial tumor, in order to effect the object in view. It is no argument against the proposed plan, that Mr. Hey,* and other experienced practitioners, have declared that evacuations from the bowels rarely effect the reduction of a strangulated hernia; for it should be remembered that, on such occasions, the rectum contracts the moment it has discharged its contents, and permits but a comparatively small and insufficient quantity of wind to escape, whereas, according to the mode which I propose, the flatus is offered every facility of passing off in a continued stream, and for as long a time as may be found necessary. In one case the contents of the flexure and a portion of the gas contained between it and the cæcum, are evacuated, while the latter is left distended; so that if the bowels should happen to contain much fecal matter, such is the peculiarity of the process by which the cæcum and sigmoid flexure are filled and emptied, and such the rapidity with which the rectum contracts after discharging itself, that repeated stools may take place, without producing any favorable impression on the strangulated portion of intestine. In the other case, no matter how distended it may be, we have it fully in our power to rapidly empty the whole of the intestinal canal, and thus insure the reduction of its strangulated portion." (P. 113.)

As Dr. O'B. has but recently conceived these opinions, he has had but few opportunities of trying their solidity by the test of experience in practice. He adduces some facts, however, which are interesting. For example: Mary Bently laboured under strangulated hernia with the usual symptoms; constipation of four days' standing, stercoraceous vomiting. Purgatives, bleeding, tobacco, and the taxis, failed. Dr. O'B. mentioned his views to the surgeon, who had determined upon operating. The tube was passed into the colon: "the moment this was accomplished, a considerable quantity of flatus escaped through it, and, on quickly laying my fingers flat on the tumor, I found that it was diminished by at least three-fourths of its former size." The surgeon and several pupils perceived this important change in the tumor. In a few minutes all nausea and vomiting had ceased; the pain that remained was inconsiderable. A mild enema was administered by the tube, and feces were discharged. Leeches were applied to the abdomen, to remove some remaining tenderness. In a few days a truss was applied, and the patient was discharged free from complaint. We have been obliged to condense the details of this case, but we have retained the leading facts, which to us appear curious and interesting; and without the least disposition to exaggerate the value of a mode of treatment because it possesses the charm of novelty, we must conclude that the patient was snatched, if not from death, at least from the most imminent danger, by the application of Dr. O'B.'s practice.

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* Practical Observations on Surgery, by WM. HEY, F.R.S., p. 117 *et seq.* 2d edit. London, 1810.

Another case of strangulated hernia is given, "in which the rectum was dilated solely for the purpose of removing stricture of that intestine, and was quickly followed by reduction of the hernia." It is the only instance of the kind on record that the author has been able to find; it was published by Mr. COPELAND.* A lady had had umbilical hernia for many years. She was seized with violent pain in the abdomen, and vomiting, and had had no motion for seven days. Rupture painful, and incapable of reduction for twenty-four hours. Purgatives had been given to no purpose. By accident she stated that she had been for many years of a very costive habit; that she could never pass her stools without great pain and difficulty, and that they were always very small in size. On examining the rectum, a firm indurated stricture was discovered, about two inches up the intestine, which would not admit the point of a finger to pass it." A rectum bougie of a small size was introduced high up the gut, and retained there about ten minutes. Soon after it was withdrawn there was a copious evacuation of the feces, the vomiting ceased, and the rupture soon returned spontaneously; in short, all her complaints disappeared, and she was in the same state as before the attack." The occasional use of the bougie was persisted in, with permanent relief of the stricture.

Dr. O'B. had frequently read this case without considering its true bearing, or considering its most remarkable feature as more than an accidental occurrence; and neither Mr. Copeland himself, nor any of his reviewers, suspected the connexion between the reduction of the hernia and the dilatation of the strictured rectum, which is perfectly explained by the doctrines and facts adduced by Dr. O'B. The evidence afforded by this case is the more valuable, inasmuch as the relater of it had no preconceived views upon the subject.

Such is the substance of the information the author gives us respecting strangulated hernia. He thus concludes:

"I am not without hopes that he [the reader] will here find both reasoning and facts sufficient to induce him to give the plan a full and fair trial, and that he will not condemn it, should he find it to fail in cases where the neck of the sac is found to form the stricture, where the strangulated intestine is adherent to the sac, or filled and impacted with indurated feces, or where the case is merely one of epiplocele. On the contrary, I am sure that he will give the plan a perfectly fair trial, and that, for this purpose, he will select cases of recently strangulated enterocele, or entero-epiplocele. In such cases, and they are invariably the most urgent and dangerous, I am sanguine enough to expect that it will often be found to obviate the necessity of performing the operation. It appears also to be peculiarly applicable to the treatment of those rarer kinds of cases in which hernia of an intestine through the diaphragm, or in other situations out of view, is suspected to have taken place, and to have become strangulated." (P. 126.)

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* On the Rectum, &c. Second Edition. By THOMAS COPELAND. 1814.

Some remarks are made upon the advantages of introducing the tube when unfavourable symptoms exist after the operation, and a case is mentioned in illustration. Some cases of cholic and enteritis are also detailed, which were attended by the author and other practitioners, in which the treatment he recommends was employed with decided and speedy relief.

Mr. O'Hara, resident accoucheur to the Coombe Lying-in Hospital, has furnished Dr. O'B. with cases of puerperal fever, in which it was had recourse to with great advantage; and he states, that "these are but a few out of many cases I have seen illustrative of the efficacy of the tube in those affections to which puerperal women are so subject; and, from the many opportunities I have had during a long residence in a lying-in hospital, the entire charge of which always devolved upon me in the absence of the master, I cannot speak in too high terms of its great value and efficacy."

For Dr. O'B.'s practical views respecting the pathology and treatment of Dysentery, we refer to the work. He promises a work on Tetanus, and assures us that he shall be "enabled to produce a greater number of genuine cases of tetanus, treated successfully, than can be produced by any one author, ancient or modern." The tobacco enema is the remedy in which so much confidence is placed, and Dr. O'B. has published a successful case treated by this means in the third volume of the Dublin Hospital Reports. After so large (we had almost said so injudicious) a promise, we trust, and we are inclined to believe, that Dr. O'B. will not give us reason to put him in mind of the maxim of Horace, "*Quanto rectius hic, qui nil molitur ineptè.*"

Some brief remarks are made upon the subject of Tympanitis and Delirium Tremens.

He concludes that part of his work which puts us in possession of his views of the process of defecation, and their application to the pathology and treatment of diseases of the stomach, bowels, and other organs, by "asserting deliberately that no trace of them is discoverable in any work, ancient or modern; and that the whole subject, so far from being merely improved or remodelled, has been actually created." We are not prepared to gainsay this statement; to us his views and treatment are original, and, in our opinion, deserving of the serious attention of the profession; for, granting even that objections might be urged to some parts of his doctrines, his practice, as stated (we have no reason to doubt) very faithfully in the course of the work, is too strikingly successful not to be put to the test of repeated and careful trials.

We must reserve our notice of Dr. O'B.'s "Corrections of Sir C. Bell's Views respecting the Nerves of the Face," for another opportunity.

Outlines of Human Physiology. By Herbert Mayo, F.R.S. F.G.S., Professor of Anatomy in King's College, London; Surgeon to the Middlesex Hospital; formerly Professor of Anatomy and Surgery to the Royal College of Surgeons. *The Third Edition.* 8vo. pp. 478; illustrated with numerous Engravings on copper and wood. Burgess and Hill, London.

When a book has arrived at a *third* edition, it may bid defiance to the reviewer's censure, and cannot need his praise. The public, though occasionally misled, are in general shrewd judges of good books; and however pleasing may be the plaudits of the journals, there are few intimations that an author can receive of the value of his labours more satisfactory and convincing than the quiet announcement of his publisher, repeated for the second time, that the work is out of print.

We therefore do not, in general, do more than merely notice the appearance of second and third editions; but these Outlines have been so much enlarged and improved, that such a summary dismissal would be scarcely just.

The text, we perceive, even where no great additions of matter have been made, has been in several parts rewritten; and four chapters, viz. those which treat of "the history of the Mental Phenomena and of the Brain; of the Organ of Vision; of the Mechanism of Speech, and of Embryology," assume quite a novel aspect. To these therefore we must chiefly direct the advanced physiologist's attention, assuring him that he will find them to contain much novel and most curiously interesting matter, condensed into a small space, and discussed in a masterly manner.

The modern improvements in the art of wood-engraving are so striking, that we are not surprised to find such figures in a great measure superseding the use of copper-plates, and their easy introduction into the text gives them an advantage over every other kind of graphic illustrations. We are glad to find that, in this edition, the figures have been much increased in number: they cannot fail to be of much assistance to the student, although they do not benefit us, from the difficulty of their transference to our pages.

We have named four chapters as having been in great part rewritten, and containing much novel and important matter. Each of these might furnish sufficient for an article; but we must confine our observation to one, and it shall be the last, viz. the account of the modern discoveries in embryology.

It is to Baer that we are indebted for an accurate analysis of the Graaffian vesicles. In 1827 he discovered within these ovula germs, that in the bitch are from $\frac{1}{600}$ to $\frac{1}{250}$ of an inch in diameter, and the structure of the vesicle he states to be as follows:

"1. The peritoneal coat of the ovary.

"2. The proper or cellular coat of the ovary.

"3. The thin outermost coat of the Graaffian vesicle, formed of a close filamentous tissue.

"4. The internal layer, thicker, softer, more opaque than the outer, from which it is after maceration readily separable. Its inner surface is slightly villous.

"5. The granular membrane, immediately including the humour of the Graaffian vesicle.

"6. The humour itself, slightly viscid, albuminous, pellucid, but inclining to yellow in the most turgid vesicles, containing numerous irregularly-shaped granules, with here and there a globule of oil.

"7. The discus proligerus, or germ disc, composed of closely coherent granules, which forms the bed in which is placed—

"8. The germ or ovulum, itself a hollow sphere, the crust of which consists of coherent granules.

"There is every reason to believe that Graaffian vesicles are at intervals coming forward during the whole period at which child-bearing is possible; and that they burst in succession, and shed the contained ovula, whether sexual connection takes place or not. It is probable, however, that sexual connection hastens their ripening. A principal difference in the appearance of the ovary of one past the age of thirty, and that of a child, is the scarred and cicatrized surface of the former contrasted with the uniform smoothness of the latter. The cicatrices on the former result, beyond question, from the healing of numerous lacerations of the surface produced by the escape of ovula.

"The appearance termed a corpus luteum is the consequence of the bursting of a Graaffian vesicle. It is formed by a thickening of, or deposit in, the internal coat of the Graaffian vesicle. Baer mentions, that the thickening and the yellow colour sometimes begin to appear before the vesicle bursts.*" (P. 372.)

The history of the development of the embryo is given so succinctly, that it will scarcely admit of any abridgment; we must therefore quote the first part of the section almost entire.

"The detection of the ovulum in mammalia by Baer, which has been mentioned in the preceding section, is a point only in the extensive circle of discovery which has been traced by himself and by other physiologists. According to ancient hypothesis, the development of the embryo was the evolution of parts which pre-existed in the germ. This opinion was first successfully attacked by C. F. Wolff, in a thesis which he published at Berlin in 1759, and in which he not only described a successive production of organs, of the preformation of which no trace existed; but showed that, after parts are first formed, they undergo many important changes in their structure before arriving at their perfect state. The opinions of Wolff, that the parts of the embryo are formed and not evolved, have been verified, and a vast body of knowledge ascertained upon this subject, by the labours of Pander, Meckel, Oken, Blumenbach, Baer, Rathe, Cuvier, Dutrochet, Serres, Rolando, Prevost, Dumas, and of many others, who have joined in creating a new branch of physiological science. I shall endeavour briefly to explain the leading facts which have been thus brought to light. They have an interest greatly beyond what attaches to the narration of phenomena that are simply unexpected and curious. They elucidate to a wonderful degree the affinities of remote families of animals, displaying how for a period their type of formation is the same; and explain the seeming caprice of Nature in instances of monstrous and defective formation, by showing that what appears anomalous is not the substitution of a new type, but the arrest of development, whereby a temporary character is rendered permanent.

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* "De Ovi Mammalium et Hominis Genesi. C. E. a Baer. Lipsiæ, 1827."

"The ovulum bursting from the Graaffian vesicle is received by the fimbriated extremities of the Fallopian tube, and conveyed towards the uterus.

"Baer detected the ovulum in its passage along the Fallopian tube in a bitch. It was of a yellowish-white colour, and consisted distinctly of an outer cortical membrane, or chorion, and of a globule within of a granular structure. Its diameter was the fifteenth part of a line.

"After reaching the uterus, the ovulum grows more rapidly than before. Its structure may be examined with ease, when it is about half a line in diameter. A new element is then visible in it. Upon the surface of the internal globule, a round, opaque, granular disc is seen, with a dark spot upon its centre. Dr. Allan Thompson states, that he has seen this spot very evident in the ova of the rabbit on the sixth day after impregnation.

"It does not admit of a doubt, that the spot seen on or through the inner membrane of the ovum corresponds exactly with the *cicatricula of the egg.* This conclusion is grounded, less upon their first close resemblance than on the subsequent identity of the parts which replace them, less upon either argument than upon both together. The intermediate state to the two which I refer to, has not been as yet followed out in mammalia. I therefore shall describe the cicatricula in the egg, and its first changes, as typifying what analogy renders certain occurs in all vertebral animals.

"In the unincubated egg of the common fowl, the germ spot, or cicatricula, lies immediately upon the surface of the yolk: it is circular, of a whitish colour, and about one sixth of an inch in diameter. The disc of the cicatricula is formed of different-sized granules united together, and is covered by the proper membrane of the yolk. The central part of the disc is thinner and more transparent than the rest, and has been called the colliquamentum.

"Seven or eight hours after the commencement of incubation, a small dark line may, with the aid of a magnifying glass, be discovered on the upper part of the cicatricula towards the centre of the transparent area. This line or primitive trace, delineated in the adjoined figure, is swollen at one extremity, and is placed in the direction of the transverse axis of the egg. The rounded end is towards the left, when the small end of the egg is turned from us.

"The cicatricula, germ spot, germinal membrane, or blastoderma, resting in immediate contact with the yolk, now expands itself; and at the same time acquiring thickness, it separates, towards the 12th or 14th hour of incubation, into two layers of granules. Of these, the outer, which subsequently gives rise to the osseous, nervous, muscular, and tegumentary systems of the body, is called by Pander the serous layer. The inner, situated next to and in contact with the substance of the yolk, is termed the mucous. After these two layers have appeared, a third is formed in the interval between them: this is called the vascular layer; it is generally in intimate connexion with the mucous layer, and it is to the changes which the two combined undergo, that the intestinal, the respiratory, and the glandular systems appear to owe their origin." (P. 377.)

In and from these three layers of the germinal membrane, all the elaborate structures of the animal body are formed, by a most wonderful series of changes, analogous to those which have of late years been examined with so much attention in plants; the doctrine of vegetable metamorphosis being equivalent to that of animal epigenesis.

It is not our intention to follow out the history of all these changes, but some two or three we cannot pass unnoticed.

Two longitudinal ridges are quickly raised upon the serous layer, and, in about twenty hours, the furrow between these ridges becomes converted into a canal, by the junction of its margins. It is at first open at both ends, but the cephalic extremity, which is the largest, soon becomes closed.

"According to Baer and Serres, some time after the canal begins to close, a semi-fluid matter is deposited in it, which, on its acquiring greater consistence, becomes the rudiment of the spinal chord. The pyriform extremity, or head, is soon after this seen to be partially divided into three vesicles, which, being also filled with a semi-fluid matter, give rise to the rudimentary state of the encephalon. Rolando, Prevost, and Dumas, on the other hand, suppose that the rudimentary state of the brain and spinal chord is constituted by the primitive trace itself, which they affirm exists before incubation has commenced.

"As the formation of the spinal canal proceeds, the parts of the serous layer which surround it, especially towards the head, become thicker and more solid; and before the twenty-fourth hour, we observe on each side of this canal four or five small, round, opaque bodies. These bodies indicate the first formation of the dorsal vertebræ: in a few hours several more appear, and those first produced become quadrilateral. It is about this time, or from the twentieth to the twenty-fourth hour, that the vascular layer appears.

"Towards the twenty-fifth hour, when the layers of the germinal membrane gradually expanding have covered nearly a third of the yolk, they no longer retain their flat and uniform position, but begin to exhibit various folds, which afterwards serve for the formation of the cavities of the body. That part of the germinal membrane which lies immediately before the cephalic extremity of the embryo is bent down into a fold, so as to make a depression upon the surface of the yolk; and some time afterwards, a similar fold is formed behind the caudal extremity. As these folds of the germinal membrane increase, they gradually turn in below the fœtus at its head and tail; and their margins approach one another under the abdomen, which at this period always lies next to the substance of the yolk. As the layers of the germinal membrane are bent down in a similar manner towards the sides also of the spinal canal, there is formed under each end of the embryo a sac or cavity, which communicates with the yolk by an opening common to both. The two shut sacs thus formed indicate the rudimentary state of the intestinal tube: the anterior corresponds to the œsophageal portion of the intestine, the posterior to the lower part of the large intestine." (P. 380.)

Such are the rudimentary stages of the brain and spinal cord, of the intestines and the other chylopoietic viscera; the containing cavities of which at first are open, and only subsequently enclosed by the folds of the different layers of the germinal membrane; and hence, if any thing arrests the normal development of these parts, monstrosities or malformations result. Such malformations as the exposed bladder, deficient thoracic parietes, cleft palate, hairlip, and others, are thus shewn to be not what they were once considered, *lusus naturæ*, but interruptions of metamorphoses, and arrests of development. Perhaps the sanguineous system affords some of the most curious and striking proofs of this doctrine.

We cannot trace the vascular apparatus throughout all its changes, and must commence the demonstration almost abruptly, at the part which will more especially illustrate our position.

"All the arteries take their origin from one trunk, which springs from the heart. The heart in all vertebral animals is originally one simple elongated sac. The single artery which rises from it branches into five pair of arches, between which the œsophagus lies.

"The single heart and artery, with its branchial arches, are permanent parts in fish; in other vertebral animals they undergo a series of metamorphoses by which they are brought to the characteristic type of the species. The essence of these changes in birds and mammalia is, that the heart spontaneously divides into two separate chambers, the artery into an aorta and pulmonary artery; that some of the arches disappear; others becoming permanent aortic, others permanent pulmonary branches.

"The heart of the dog, at the twenty-first day, is a membranous tube twisted in itself, and slightly divided into an auricle, ventricle, and bulb of the aorta. The wall of the ventricle soon acquires a greater thickness than the rest.

"At a period which is probably between four and six weeks, the rudiments of a septum begin to be perceived in the heart. The septum of the ventricles is produced in two ways: on the one hand it arises as a growth from the base of the ventricles; on the other it originates in the extension and growth of the right ventricle in such a manner as to form a bifurcated extremity to the heart. This appearance begins in the seventh week.

"The external figure which the heart now assumes is permanently retained in several species of mammalia. The heart of the dugong and of the manatee presents in the most characteristic manner this permanent separation of the ventricles. The same is seen in a less degree in the walrus, seal, elephant, and in some of the rodentia.

"The internal construction at present has some resemblance to the permanent character of the ventricles of the alligator. But it is most strangely and strikingly preserved in those human malformations, in which from this period a communication remains throughout life between the two ventricles.

"The nature of the formation of the inter-auricular septum is very obscure, and requires further investigation. The first appearance of an inter-auricular septum is in the direction of the Eustachian valve, which at that time appears to be continuous with the annulus foraminis ovalis; and thus lying before the entrance of the vena cava inferior, causes it to open into the left auricle. This is seen about the fifth week. At the sixth week this septum becomes perforated by many foramina, and by a process of absorption wastes into the Eustachian valve. At the same time a production analogous to the first begins to be formed in the place of the permanent inter-auricular septum. It is remarkable that it is at this period, namely, when the inferior cava begins to be shut out of direct communication with the left auricle, that the pulmonary veins open into it. The valvula foraminis ovalis goes on increasing till the seventh month, when it is already a sufficient flap to cover the orifice of communication.

"At this period of development it is evident that the fœtus becomes fit for pulmonary respiration. The oblique opening, which serves if the embryo remains in utero to transmit the blood from the right auricle into the otherwise empty left, would it is evident become closed, if breathing and a circulation through the lungs were now commenced, and an equal stream of blood were poured into the left auricle as into the right.

"At the time when the aorta gives off its cervical arches, the construction of the adjacent parts participates in the same character, and might more readily be converted into branchial organs than into a higher type. The neck is short and thick, the pharyngeal portion of the intestine is of great size, and its sides are penetrated by clefts.

"Four openings on each side of the œsophagus have been observed in the embryo of the dog, between three and four weeks old; in that of the sheep of three weeks; of the pig at three weeks; of the rabbit on the twelfth day; and in the human embryo of six weeks: in the embryo of the dog, some little time before that mentioned above, only three apertures are found. While three pairs of clefts exist in the sides of the pharynx, there are in the dog, as in the chick, only four pairs of vascular arches; but before the first of these becomes obliterated, a posterior or fifth pair is produced, while at the same time the fourth branchial cleft is formed; so that in the mammiferous animal five pairs of vascular arches and four pairs of clefts exist for some time simultaneously in the sides of the neck.

"A few days after the appearance of the fifth arch, the neck begins to elongate, the apertures are closed gradually on the outside, and the lower jaw becomes more developed; while the vascular arches undergo those changes by which the permanent arterial branches arising from the heart are formed.

"The first and third pair of vascular arches form the carotid and subclavian arteries in mammalia, as in birds, and the second pair seems to be wholly obliterated, or at least gives only a small branch; in mammalia, however, the arch of the aorta, or permanent communicating vessel between the ascending and descending aorta, is formed from the fourth branchial arch on the left side of the œsophagus; so that the order in which the vessels of the head and superior extremities arise is reversed, the right innominata taking its origin before the vessels of the left side.

"The pulmonary vessels appear to be given off by the fourth arch on the right and the fifth on the left side, the fifth on the right being wholly obliterated. While, however, the carotid and branchial arteries become developed from the anterior arches, the pulmonary arches do not continue to carry blood to the root of the aorta, as takes place in those of the bird. The parts by which these arches communicate with the root of the descending aorta (forming in birds the ductus botalli) become gradually obliterated; so that of all the five pairs of vascular arches in the embryo of the mammiferous animal, only one, the fourth of the left side, remains prominent.

"While these changes take place in the pulmonary arches, the bulb of the aorta, from the single cavity of which the pulmonary and systemic vessels arise for some time in common, is divided, so as to form the roots of the aorta proper and pulmonary arteries. According to Meckel, the septum which has separated the left ventricle entirely from the right, appears to be continued onwards into the bulb of the aorta, and thus separates this cavity longitudinally into two compartments. The division of the bulb is, however, imperfect for a time; it advances gradually from the part next the ventricle to that from which the vascular arches rise; so that, while the posterior part is divided, the anterior yet remains single, a communication being left at this part between the aortic and pulmonary roots, which admits of the passage of the blood from the right ventricle into the aorta, when the pulmonary arches are obliterated. When the division of the aortic bulb has just taken place, the arch and descending part of the aorta appear to be a continuation of the pulmonary rather than of the aortic root, the latter appearing to lead only into the vessels of the head and anterior extremities. The ductus arteriosus remains for some time, as at first, short and wide, and has the appearance of being an opening of communication between, or a deficiency in the parietes of the juxtaposed tubes; it afterwards becomes lengthened out and narrowed, and appears during a short period to pass from the aorta to the pulmonary root and aorta continuous with it; but about the tenth week in the human embryo this part is dilated, and forms a more direct communication between the ascending and the descending aorta, and the ductus botalli is now formed by another part, viz. the end of the pulmonary root leading into the arch of the aorta." (P. 414.)

Was ever so satisfactory an account of the malformations of the heart before within our reach? Could the organic causes of the *morbus* ceruleus be physiologically explained, before the discoveries above mentioned were made, by those anatomists who have thus immortalised themselves?

We much regret that our space forbids our making any further extracts. The other parts of this work, which we have left untouched, will be found equally pregnant with interest as those we have slightly scanned. It is no small praise to say that the additional matter in this new edition is worthy of that to which it has been added, and we expect that we only repeat the general opinion, when we state our belief that MAYO's Physiology which for some years has been, bids fair, by its regeneration, still to continue a standard work.

A Dictionary of Practical Medicine: comprising General Pathology, the Nature and Treatment of Diseases, Morbid Structures, and the Disorders especially incidental to Climates, to the Sex, and to the different Epochs of Life; with numerous Prescriptions for the Medicines recommended, a Classification of Diseases according to Pathological Principles, a copious Bibliography, with References, and an Appendix of approved Formulæ; the whole forming a Library of Pathology and Practical Medicine, and a Digest of Medical Literature. By JAMES COPLAND, M.D., Consulting Physician to Queen Charlotte's Lying-in Hospital, &c. *Part I.* 8vo. pp. 336. Longman and Co., London.

IN a previous notice we have already expressed our general opinion of the work; but it at that time reached us at too late a period in the month to allow us to do more than partially examine its contents, and look over one or two of the numerous articles contained in this first part of the most valuable "Dictionary of Practical Medicine" that has hitherto issued from the press. During the interval that has elapsed since we warmly recommended it to the attention of our readers, we have sedulously perused several of the treatises it contains; for it should be understood that this Cyclopædia is not a thing of shreds and patches, one piece gathered here and another collected there, and having no other common bond of union than the thread with which they are sewed into the same cover; but that it consists, as far as it has gone, of a series of well, nay elegantly written essays, containing facts and reasonings collated with much care, and digested by a strong mind.

We are somewhat at a loss which of the monographs to select, as affording, within our limits, such extracts as may justify the encomia we have passed; not that any of the series are barren of examples, but that they are already so far condensed that they almost forbid any further abbreviation. We shall, however, select the essay on the Blood, which occupies sixty-six very closely printed columns. For convenience of reference, this monograph is subdivided into six chief heads, and 161 minor sections. The former relate, I. To the states of the blood in health; II. Exuberance of blood; III. Local determination of blood; IV. Deficiency of blood; V. Morbid effects of loss of blood; VI. Alterations of the blood in disease. The latter subdivisions of course refer to the various subordinate topics included in the six greater sections, and, from their number, it will be at once apparent that the subject has been fully treated.

We shall pass by the three first sections, and make our earliest extracts from the fourth, which we shall quote entire, as it furnishes a convenient illustration of the concise form in which our author writes, and the quantity of information he manages to convey in a few words.

"IV. DEFICIENCY OF BLOOD. SYN. *Anæmia* (from the primitive *α*, and *αἷμα*, blood.) *Bloodlessness*. *Anémie*, Fr. *Der Blutmangel*, Ger. *Dyspepsia Anæmia* (Young.) *Marasmus Anhæmia* (Good.)

"CLASSIF. 3. *Class*, Diseases of the Sanguineous Functions; 4. *Order*, Cachexies (Good.) I. CLASS, V. ORDER (Author.)

"34. DEFIN. *A deficiency of blood in the whole body or in some important organ, not proceeding from natural or artificial hæmorrhage, giving rise to a waxy, bloodless state of the countenance and surface, emaciation, feeble quick pulse, and great languor and debility.*

"35. Defect of blood, bloodlessness, or anæmia, although not of frequent occurrence, is yet occasionally met with, particularly in its less remarkable, or local forms. In connexion with chlorosis it is oftener observed. Cases of anæmia have been recorded by Reiselius, Swhenke, and others; and the disease fully described by Becker, Albert, Janson, Hoffmann, De Haen, Insenflamm, Lieutaud, Hallé, Andral, and several pathologists and practical writers of the present day. I shall first offer a few general observations on local anæmia; and afterwards describe more fully general anæmia and its complications. The deficiency of blood, occasioned by natural or artificial losses of it, is considered under a distinct head.

"36. i. PATHOLOGY OF ANÆMIA. 1st, *Local anæmia.* Deficiency of blood in an organ or part is evidently the result of one or more of the following pre-existing lesions:—*a*, Of diminished influence of that portion of the ganglial or organic class of nerves which supplies the blood-vessels of the organ; *b*, Of defective vital expansion of its capillaries, probably owing to the depressed state of the influence exerted on the vessels by the nerves supplying them; *c*, Of mechanical impediments in the way of a sufficient supply of blood; *d*, Of imperfect developement, or diminished caliber of the arteries by which blood is conveyed to the organ; *e*, Of disease of the organ or part, or an imperfect exercise of its functions; and, *f*, Of unusual flux of blood to other quarters, causing a proportionate diminution of it in others. It is evident that these states are merely local, and are capable of co-existing with other changes affecting the whole mass of the circulating fluid, as respects both its quantity and its quality; and that various disorders of function, according to the particular state on which the anæmia depends, and the extent to which it may exist, will be the consequence.

"37. The organs most subject to this condition of their circulation are, according to M. Andral, the lungs, the brain, the liver, the substance of the heart, the stomach and alimentary canal, and some of the voluntary muscles. To these I would add, the spleen, the ovaria, and the generative organs of the male. In many of these, as in other parts, atrophy is associated with the anæmia: and may be considered, in the majority of cases, as the consequence of it. The symptoms of local anæmia are not always manifested during life; but they frequently are, as I shall have occasion to point out, when considering the morbid conditions of those organs most subject to this change. Thus, in the completest of all the states of local anæmia, as when the obliteration of an artery cuts off all supply of blood to the organ, gangrene will result; frequently, when anæmia is seated on the brain, a form of convulsion is the consequence, with other symptoms stated in the article on this subject (see Brain—*Anæmia of*); and when the ovaria, at the period of puberty, is not supplied with the requisite quantity of blood, owing to deficient influence of the ganglial nerves distributed to the organs of generation, chlorosis, sometimes with more or less of general anæmia, is the constant effect.

"38. 2d. *General anæmia.*—The blood circulating through the body may be most remarkably deficient, in respect both of its quantity, and of the relative proportion of red particles. In many cases in which the absolute quantity of blood in the body is diminished, the globules are still more remarkably deficient, they being insufficient to give the blood its usual deep colour. General anæmia presents itself in practice, 1st, as a primary disease; 2d, as a consequence of pre-existing lesions of some one of those organs which are concerned in conveying the nutritious fluids into the blood, or in the processes of sanguifaction; 3d, associated with other diseases, resulting equally with it from some antecedent affection, the nature of which cannot, perhaps, be readily recognized.

"39. *A*. The primary forms of anæmia, when closely analysed, seem to proceed, 1st, from deficient nourishment; 2d, from deficient vital power, from a torpid or depressed state of the influence of the organic class of nerves on the digestive, assimilating, sanguifying, and circulating organs which they supply.—*a*. The influence of deficient supply of nourishment in producing anæmia may be readily imagined, and instances showing it are numerous. I will merely allude to one: M. Gaspard, whose researches have tended much to advance the state of the pathology of the fluids, has illustrated this part of the subject by observing the remarkable degree of anæmia which existed in a large proportion of the inhabitants of a district devastated by famine, who lived upon grass. A more common and less expected form of general anæmia is that which arises from the injudicious restriction of diet and regimen, during convalescence from acute diseases, particularly those which have required large depletions. Several instances of this state of disease have come before me, and would, I am confident, have terminated in dropsical effusions (§ 44,) or in death, if a different system had not been adopted.

"40. *b*. A torpid state of the organic class of nerves, is one of the most influential, if not the most frequent, antecedent affections to which we can impute this state of the circulating fluid. It is extremely probable that those instances of its occurrence from being shut out from the sun's influence, and the constant respiration of an unwholesome air, arise from the continued privation of salutary stimuli to this important class of nerves, upon which the sanguifying processes depend.

"41. The influence of the sun's rays in promoting all the vital actions, particularly those of organic life, probably from modifying the electro-motive state of the frame, must be evident to all. The good effects of light and air are shown in the vegetable kingdom, the circulating fluids of which cannot be duly formed without exposure to both. The sun's rays diffuse a genial influence through the frames of the aged, and excite the organic and generative functions of the young. It has been observed that those persons who are entirely excluded from the light of the sun, and breathe the close air of mines, are particularly subject to general anæmia. M. Chomel has given a very interesting account of the disease which affected the workmen employed in a coal mine at Auzain. It commenced with cholicky pains, meteorismus, blackish-green stools, dyspnœa, palpitations, great prostration of strength, followed, in ten or twelve days, by a yellowish or waxy and bloodless appearance of the countenance. The capillary vessels disappeared from the conjunctiva and mucous surface of the mouth; and the pulsation of the arteries could scarcely be felt. The patients complained of palpitations, anxiety, oppression and suffocation on exertion, paroxysms of fever, profuse perspirations, œdema of the countenance, and rapid emaciation. This state continued for six months or a year; and in some cases terminated fatally, with the reappearance of the invading symptoms. Four of these patients were sent to Paris for treatment, and were ordered light nutritious diet, bitter infusions, &c. One of them died; and on dissection, the arteries and veins were found almost void of blood, containing merely a little sanguineous serum; and little or no blood flowed from the parts divided during the inspection. The appearances in this case led Mr. Hallé to prescribe iron filings in the dose of a drachm daily, with tonics and opium; and, under this treatment, all the symptoms gradually vanished, the capillary vessels reappearing on the surface.

"42. *B*. It is probable that general anæmia will not take place, unless consecutively of remarkable torpor of the vital influence, or of some other morbid condition of one or more of the organs which contribute to the formation of blood. Where the digestive powers and the functions of the liver are weakened, anæmia to a slight degree is not infrequent. Its connexion with chlorosis is merely that of an associated effect of pre-existing depression of the influence of the system of organic nerves. (See *Chlorosis*.) The lungs have been considered by some authors as the organ which is chiefly concerned in the production of anæmia, and consequently have been viewed by them as the seat of hæmatosis, or at least the place where this process is completed. Without disputing that such is the case to a certain extent, I am disposed to view the liver as being equally, if not more, concerned in this function, an opinion long since contended for in my Physiological Notes (see *Appendix to* M. Richerand's *Elements of Physiology*); and consequently as being in many cases very influential in the production of general anæmia. It is probable, however, that other viscera or parts may also give rise to it. Thus it may be admitted that total obstruction of the thoracic duct will occasion it: and I have repeatedly observed it in children affected with various chronic diseases of the viscera of organic life; being here, as in most cases, one of the results of imperfect digestion and sanguifaction, as well as of obstruction to the passage of chyle into the blood. One of the most remarkable cases of general anæmia was recorded by Dr. Combe. In it all the viscera were found nearly bloodless, excepting the spleen; but not diseased in other respects, at least not to the extent of impeding their functions. The thoracic duct and absorbent system were not examined.

"43. The symptoms of anæmia have been nearly all alluded to in the foregoing remarks. I may, however, enumerate them briefly at this place. They consist of a pale, waxy, or blanched appearance of the countenance and integuments, in which the cutaneous veins are scarcely seen; and those which appear are pale, apparently empty, do not fill quickly, or scarcely at all, upon pressure made upon them; and, when emptied, fill very slowly. The conjunctiva has lost its red vessels; the lips, tongue, and inside of the mouth, are pale; the pulse feeble, small, irregular, and readily made still quicker or fluttering upon mental emotion; the patient is languid and very weak; complains of flatulence, borborigmi, and an irregular state of the bowels, with want of appetite, and an occasional nausea; a sense of sinking and syncope, particularly upon assuming the erect posture, followed by palpitations; oppressed, short, hurried, and sometimes gasping respiration; irregular convulsive or spasmodic movements; tremors; œdema of the ancles; and in some cases the more severe symptoms described as following sinking after large depletions (§ 54.) In the more unfavourable cases the patient may be carried off by a fit of syncope upon assuming quickly the erect posture; or by a convulsion; or sink with the symptoms of exhaustion, or with those of effusion on the brain, or in the pleural or pericardial cavities. It most commonly runs into one or more of the complications about to be noticed.

"44. 3d, *Complicated anæmia.* Deficiency of blood, as respects both its diminished quantity and its poor quality, or the defect of red globules, is often associated with visceral disease, of which it is generally the consequence; but it also may give rise to various affections, both functional and organic. That anæmia should be complicated with certain chronic diseases of the liver, mesenteric glands, and absorbent system, chlorosis, &c. may be expected; but that it should give rise to diarrhœa, and to dropsical effusions in various parts, particularly in the shut cavities and cellular tissue, without any alteration of the solids, may not appear so obvious, although admitting of explanation. M. Andral states, that he has observed anæmia in the bodies of persons who had died dropsical; and in persons who had complained of diarrhœa, and profuse perspirations; and very justly considers both the dropsical effusions into the shut cavities and into the cellular tissue, and the exhalation from the digestive mucous surface and skin, as perfectly independent of any local congestion or irritation, and to be analogous to the profuse diarrhœa and perspirations which occur in persons who are brought near to dissolution by long protracted disease. In all such cases, whether attended with effusion into shut cavities or cellular tissue, or with increased exhalation from mucous surfaces, we may consider nearly the same pathological conditions to exist as their principal sources, viz. diminished tone of the exhaling orifices, with lessened vital cohesion of the tissues in which they open; a poor and thin state of the blood, the crasis of which is much lowered; and a more rapid circulation of the remaining fluid.

"45. Anæmia, when existing even in a moderate degree, will often give rise to various functional disorders, which are, however, of no constant character, but differing with the temperament, habit of body, &c. The chief of these are hysterical and epileptic convulsions, palpitations, leipothymia or syncope and palpitations alternately, irregular or anomalous convulsions and spasms, chorea, and various nervous tremors resembling chorea, dyspnœa, sickness or vomiting, œdema of the ancles, diarrhœa, headach, &c., with weak, small, quick pulse; pale, waxy, or doughy state of the countenance; listlessness, flatulent state of the abdomen, gastralgia, cholicky pains, very weak digestion, vermination, and irregularity of the fæcal and urinal evacuations. It will also be followed by atrophy and softening of several of the internal viscera, and general emaciation.

"46. In cases where general anæmia is not excessive, it may be admitted that both inflammation and hæmorrhages may still occur, particularly the latter, from the causes usually producing them; and that they will have a remarkable tendency to terminate unfavorably, owing to the state of the system causing the deficiency of blood, to this defect itself, and to the want of vital resistance, as well as to the incompatibility of most of the means of cure with the state of the constitutional powers and of local action.

"47. *Causes.*—Several of the causes of anæmia have been already alluded to (§ 39—42.) There may be others which have not yet been ascertained. I may state, however, briefly and generally, those which have been usually acknowledged. They consist of insufficient and poor food; excessive secretions and evacuations; masturbation practised early in life, and long continued; long exclusion of the body from the direct influence of solar light and rays; protracted confinement in crowded apartments, in the stagnant and impure air of manufactories, especially when affecting children or very young persons; and the constant respiration of a moist, impure, and miasmal atmosphere, from which the sun's rays are shut out. All these exhaust or depress the vital and nervous powers; whilst some also either cut off the necessary supply to the circulating fluid, or waste its richer constituents. To these causes may be added certain malignant organic diseases, as carcinoma, &c., which, in the latter stages, is always attended with more or less of anæmia; impeded development of organs, particularly those belonging to the generative functions, whose perfect evolution is requisite to the salutary excitement of all the organic actions, especially those of digestion and sanguifaction; and lesions which either impede these latter functions, and interrupt the passage of chyle into the blood, or vitiate these fluids.

"48. *Treatment.*—The most rational and the most successful means that can be employed consist of such as are calculated gently to excite and permanently to promote the organic functions. Of these, the most appropriate appear to be the various preparations of iron, bark, sulphate of quinine, camphor, ammonia, small doses of iodine, æther, &c. combined occasionally with opium, hyosciamus, extract of hops, conium, &c. when the disease is attended with cholicky pains. Conjoined with these, the chalybeate mineral waters, stimulating frictions of the surface, light and digestible food, gentle exercise in the open air, particularly on horseback, and change of air, will be found of much service. During the employment of tonics, due attention should be paid to the state of the secretions and excretions; and, when the bowels are constipated, the more tonic and less irritating aperients be resorted to. Of these, perhaps, the best are rhubarb, and aloes, the aloes and myrrh pill, the compound iron pill, &c.

"49. When the state of the system is attended with hysterical, convulsive, and other nervous affections, a combination of tonics and chalybeates, with antispasmodics, as the preparations of valerian, ammonia, zinc, myrrh, extract of hops, galbanum, æther, strychnine, and various others, is indicated. If we have reason to suspect that the anæmia is a consequence of obstruction or of torpor, combined with an enlargement of some organ or part concerned in the formation of blood, the preparations of iodine, the liquor potassæ alone or combined with tonics, the subcarbonate of soda, the boracic acid, and sub-borate of soda, are the best medicines with which I am acquainted.

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In the section which treats of the "Morbid Effects of the Loss of Blood," we find much sound reasoning and good practical advice. We can, of course, make but two or three short extracts.

"62. ii. OF EXCESSIVE LOSS OF BLOOD IN THE COURSE OF VARIOUS DISEASES.—There are two important considerations which should not be overlooked in practice; viz. that in many diseases, apparently attended with excitement, we shall meet with cases in which the actual quantity of blood in the body is much less than usual; and in various others, bloodletting will often not be borne, although seemingly indicated, and although the quantity of blood in the frame be not lessened. In illustration of the former of these, I may state that many years ago I had an opportunity of remarking minutely the appearance on dissection of a man of middle age, and somewhat fat, who had complained of an acute and painful disease, obviously functional, for which he had been blooded only twice on successive days, and on neither occasion to above thirty ounces; and yet the symptoms of excessive loss of blood appeared, from which he died in twenty-four hours after the second depletion. The most careful examination could detect no organic change, excepting the remarkably bloodless and pale state of all the viscera. Even the brain was less vascular than usual. That in various diseases, unattended by diminution of the circulating fluid, depletion will produce marked symptoms of depression and sinking, owing to the state of the vital power being insufficient to accommodate the vessels, by their tonic or vital contraction, to the reduced bulk of the blood, is well known, and has been fully discussed in the articles on *Adynamic Fevers, Erysipelas,* and *Puerperal Fevers;* in which, as well as in puerperal mania, and various other acute diseases, large vascular depletion is often most injurious.

"63. *A. Of excessive loss of blood in diseases of excitement.*—The morbid effects of large depletions will necessarily vary with the nature of the disease in which they are employed. When carried too far, in cases of excitement, where the nervous or vital power is not depressed, and the blood itself rich or healthy, reaction generally follows each large depletion, and thus often exacerbates or brings back the disease for which it was employed, and which had been relieved by the primary effects of the evacuation. This is more remarkably the case in acute inflammations of internal viscera, particularly of the brain or its membranes. Thus, every observing practitioner must often have noticed that a large depletion, when carried to deliquium, will have entirely removed the symptoms of acute inflammation when the patient has recovered consciousness; and that he expresses the utmost relief. But it generally happens that the inordinate depression, the very full syncope which is thought essential to the securing of advantage from the depletion, is followed by an equally excessive degree of vascular reaction, with which all the symptoms of inflammation return; and the general reaction is ascribed entirely, but erroneously, to the return of the inflammation, instead of the latter being imputed to the former, which has rekindled or exasperated it, when beginning to subside. The consequence is, that another very large depletion is again prescribed for its removal; and the patient, recollecting the relief it temporarily afforded him, readily consents. Blood is taken to full syncope, again relief is felt, again reaction returns, and again the local symptoms are reproduced; and thus, large depletion, full syncope, reaction, and the supervention on the original malady of some or all of the phenomena described above as the consequence of excessive loss of blood, are brought before the practitioner, and he is astonished at the obstinacy, course, and termination of the disease, which, under such circumstances, generally ends in dropsical effusion in the cavity in which the affected organ is lodged; or in convulsions, or in delirium running into coma; or in death, either from exhaustion, or from one of the foregoing states; or, more fortunately, in partial subsidence of the original malady, and protracted convalescence. Such are the consequences which but too often result, which I have seen on numerous occasions to result, when bloodletting has been looked upon as the only or chief means of cure, the 'sheet-anchor' of treatment, as it too frequently has been called or considered during the last twenty years.

"64. *B. Of the mode in which excessive loss of blood in disease may be best avoided. Method of conducting bloodletting.*—From the above it will appear obvious that, if bloodletting were better managed, and directed so as to make an impression on the local ailment, but in such a manner as to avoid being so readily followed by the reaction which reproduces the malady for which it was employed, great advantage in practice would result, and much less blood require to be removed, even in the most acute cases. *a.* In order to accomplish this, I have long been in the habit, and have inculcated it in my lectures on the practice of medicine, from 1824, of directing the following mode of practice, when large bloodlettings were required in the treatment of visceral inflammation: The patient should be either in bed or on a sofa, and in the sitting or semi-recumbent posture, supported by several pillows. The blood is to be abstracted in a good-sized stream, and the quantity should have some relation to the intensity and seat of the disease, and the habit of body and age of the patient, but chiefly to its effects; it should flow until a marked impression is made upon the pulse, and the countenance begins to change. Further depletion must not now be allowed; but the finger should be placed on the orifice of the vein, the pillows removed from behind the patient, the recumbent posture assumed, and the arm secured. Thus a large quantity of blood may be abstracted, when it is required, without producing full syncope, which should always be avoided; and when a large mass of this fluid is either unnecessary, or might be hurtful, the speedy effect produced upon the pulse and countenance by the abstraction of a small quantity will indicate the impropriety of carrying the practice further. In this manner I have often removed about forty ounces of blood, where large depletion was urgently required, before any effect was produced upon the pulse, but always carefully guarding against syncope; and, by the subsequent means used to prevent reaction, no further depletion has been required." (P. 177.)

"68. Under no circumstances ought a patient to be blooded whilst his head is nearly on the same level with the trunk; and the utmost care should be taken in having recourse to venesection in cases of dilatation of the cavities of the heart, particularly those of a passive nature. It is seldom necessary in such cases; and if circumstances should arise to require it, the blood should be taken, in the manner I have calculated (§ 64), from a small orifice and to a small extent. In the majority of cases, the state of the venous circulation, if duly examined, furnishes some information as to the quantity of blood in the system, and therefore sometimes becomes a valuable guide to bloodletting in some doubtful cases." (P. 178.)

The sixth and last section is the most copious of the whole, and it contains an admirable digest of what has been discovered both by ancient and modern physiologists, with regard to that very obscure problem, "the alterations of the blood in disease." It, however, will not admit of abridgment; and we again recommend it, and the other articles with which it is accompanied, to the attentive perusal both of students and practitioners.

BIBLIOGRAPHICAL NOTICES.

A Plain Account of Vaccination, designed for the Heads of Families, wherein the History, Advantages, and Errors of this Subject are popularly treated. 32mo. pp. 58. Renshaw and Rush, London.

This is a simple, plain, and unpretending little pamphlet, which we doubt not will be of service to those readers for whom it is designed. It will give them in a few words as much information as they require, and quite as much as non-professional people ought to have, upon a subject which cannot fail to be interesting to every parent. It may possibly remove some prejudices, and this will be doing much good. It will probably render intelligible to some well-meaning but ill-judging persons the causes of occasional vaccine failures, and convince them that such failures are not only in the majority of cases, not attributable to their medical attendants, but not even to the ordinary influence of this disease; but to a variety of extraneous and accidental circumstances, which, knowing their power, they will be more easily able to guard against.

Observations on Impediments of Speech, with some Remarks on their successful Treatment; in a Letter addressed to T. J. Pettigrew, Esq. President to the Westminster Medical Society, &c. By Richard Cull. 8vo. pp. 31. Renshaw and Rush, London.

We do not find any thing strikingly novel, or particularly important, in this pamphlet. It is, however, a short and sensible letter on a very interesting subject; and, as it may probably fall into the hands of some of those unfortunates whose miseries are remediable, if they would but endeavour to cure themselves, it will doubtless convey consolation to them, and will do much good if it encourage them to persevere, *on principle*, in remedying one of the most serious inconveniences which men mixing in this busy world can suffer, viz. the difficulty of communicating their thoughts to others.

Impediments of speech are so often entirely owing to the want of knowledge how to use the vocal organs, that our only surprise is that they have not been made by every stammerer an especial study. So much more frequently does stuttering depend upon an *improper use* of the instruments of speech, than upon any physical defect in the instruments themselves, that we have never known a stammerer who really set about learning the use of the apparatus with half the energy a mechanic strives to master the tools of his trade, that did not get over his impediment of speech. On the contrary, we have known several, whose hesitation was so great as to be absolutely distressing, so completely to gain the mastery over the defect as to become not only intelligible, but fluent, nay even eloquent, speakers. We are therefore quite intolerant of any empirical schemes, or secret systems, by which stammering is pretended to be cured. It must be treated like other defects, either functional or organic, on principle; and those surgeons will be the most likely to afford relief, and treat the disease effectually, who understand the mechanism of the parts, and have, like Mr. Cull, studied their several uses.

REPORTS

FROM HOSPITALS AND MEDICAL INSTITUTIONS.

HOSPITAL OF INSTRUCTION AT ALGIERS.

Cases of Gunshot Wounds, by Professor Baudeus.

From among these cases, all of which are of great interest, we select the following, in which have been remarked phenomena agreeing with the opinions of modern physiologists on the functions of the fifth pair of nerves, and with regard to the seat of memory.

Loss of Sight and of Memory, following a Gunshot Wound in the Superciliary Region.

A captain of the 30th regiment was struck by a ball at the union of the internal third with the two external thirds of the superciliary arch of the right side. The projectile, after having splintered the external layer of the frontal sinus, lodged in the internal layer so as to compress the anterior lobe of the brain. The ball was extracted with some difficulty by means of the lever. The wounded man was carried to Algiers in a comatose state. Traumatic fever was attacked with antiphlogistics. An aërial fistula, with emphysema of the eyelid, established itself, which disappeared by the employment of nitrate of silver and a compress. The globe of the eye did not appear at all altered in structure, but its functions were completely abolished: this could be explained by the lesion of the frontal nerve of the fifth pair, the communications of this branch with the nasal branch of the same nerve, and the twigs which unite this last with the ciliary nerves of the ophthalmic ganglion. Memory was altered so that this officer lost the remembrance of his actions; objects which the evening previous had most interested him, were completely forgotten within the twenty-four hours. Frequently he was obliged to make use of the word *thing* (chose) instead of the proper expression, which escaped him in spite of all his efforts.—[From the *Revue Médicale*, February 1833.]

HOPITAL LA SALPETRIÈRE.

Case of Congenital Bulimia. Communicated by Dr. Descuret.

Anne Denise L'Hermina, born at Noyou, 23d July, 1786, from the first moments of her life, was remarkable for her voracity, exhausting her nurses, and sucking more than four children of her own age. Towards her seventh year the menstrual flux began, and with this function were developed the other attributes of puberty. As she advanced to her tenth year her gluttony kept pace with her age, and obliged her twice to quit her foster-parent, because she ate the bread of all the children in the school.

Wandering then from village to village, she supported herself with raw greens and bread, which she received from charitable persons. On returning to Noyou for the third time, she set up a little school, and only required in payment bread, of which she consumed ten pounds a-day; but, quitting soon after a profession which did not relieve her appetite, she went to St. Quentin, to rejoin her elder sister, who placed her in the service of a gardener, who kept her on short commons; and afterwards she lived at an inn, where she found an ample supply.

Having by a blow hurt the right breast, she came to Paris for advice, but, before entering the hospital, she was twice arrested for stealing, at bakers', several loaves, which she devoured at the moment. Conducted to St. Louis' Hospital, she was affected for seven months with a bloody discharge from her wound, and, in spite of this hemorrhage, which the attention of the surgeons could not entirely stop, she was regular. A vomiting of blood, to which she was subject for some years, continued to take place periodically. She was afterwards transferred to the Venereal Hospital; and, on quitting this establishment, she offered her services to more than one person, who failed not to discharge her as soon as they perceived her bulimia, and the epileptic attacks to which she had been subject since seven years of age. Abandoned to her unfortunate lot, she wandered in Paris, living upon alms, and eating the refuse of aliments which she found at the doors. The assistance she received being insufficient for her appetite, she entered a brothel, from which she was taken by a charitable person, at whose recommendation many physicians tried, without avail, a quantity of remedies to restore her to health.

At this epoch, Denise was placed in the Salpetrière, in the epileptic division, where she was attended by Messrs. Esquirol and Amusat. Her habitual hunger was then satisfied with from eight to ten pounds of bread daily. Her sleep was very short; she hardly ever took liquids, except during the epileptic attacks. Her evacuations were rare, and occasionally bloody. She had vomiting of blood two or three times in a month. Her *great hunger* seized her nearly as often; she then eat, during the night, as much as twenty-four pounds of bread. At the commencement of the access she lost cognisance, and, as soon as she recovered it, she threw herself on her bread, and became so furious if they contradicted her in this imperious want, that she would bite her clothes, and even her hands, and returned only to reason after having entirely calmed her hunger. At this time the epigastrium was the seat of pain, which pressure augmented; she also felt a body rise in the œsophagus, which she compared to a large leaf of a tree. She seemed to be forcibly bound about the breasts; she became bathed in a cold sweat; then, on making efforts to reject the body which oppressed her, the leaf descended into her stomach, remounted soon more or less high; at last vomitings of clotted black blood, floating in blood more clear and unmixed with aliments, relieved her, and the appetite took its habitual type, until the same occurrences came to manifest anew themselves.

These attacks brought her frequently to the infirmary, where M. Rostan made her follow several kinds of antiphlogistic treatment. Some months after, she went out of the Salpetrière, and experienced the same crises frequently, until the month of February 1823, at which time she came to consult me. She complained of an insupportable itching at the nose, navel, and arms; she had the pupil very dilated; pulse regular, without fever; skin cool, tongue loaded, and mouth bitter. I asked her if ever she had passed worms, to which she answered in the negative. She then took two ounces of castor-oil, with an ounce of syrup of lemon; and the following day brought to me several fragments of tænia she had passed, and said the unpleasant symptoms had ceased.

From this time the hunger of Denise decreased sensibly; she consumed but five pounds of bread, and two or three strong soups, each day. The *great hunger* she had experienced periodically on the 9th February for five years did not occur this time, nor did it again take place till 1828.

Denise had then, to my knowledge, three sorts of hunger: 1, the hunger which, from 1820 to 1822, was appeased by twelve pounds of aliments in twenty-four hours; 2, that hunger which took place three or four times a-month, more frequently still on the least contradiction, and during which she ate from twenty to twenty-four pounds of bread; 3, *her great hunger*, which occurred on the 9th February, for five years in succession, and once on Good Friday, because she had thought of fasting. It was then she devoured, in twenty-four hours, from thirty to thirty-two pounds of aliments, as much bread as soup, eating and vomiting blood alternately, until she was completely exhausted. One year, being in the kitchen of the Marchioness de Latour de Pui, on the 9th February, Denise was seized with her *great hunger*, and swallowed up in a few minutes the soup destined for twenty guests, and twelve pounds of bread.

On being taken home, she continued eating during a part of the night, and almost all the next day.

As before mentioned, from February 1823, the appetite of Denise diminished considerably, which should in part be attributed to the expulsion of the tenia: I say, in part, for from this moment she took to drinking alcoholic liquors in frightful quantities; she drank every two hours either a glass of wine or of brandy, pretending that liquids nourished her more than solids. It may easily be conceived how numerous were the ill consequences produced by such irregularities of regimen. The worst of all was the suppression of the menses; this occurred in 1826, and it was often necessary to bleed locally and generally, though these means gave only momentary relief. On the other hand, Denise, whose stomach was continually over-exerted by stimulating drinks, began to have singular tastes. Thus, occasionally she ate raw cat's-meat, and cleaned her teeth by browsing on the grass, which ordinarily she digested pretty well. On the 1st July, 1828, she went to her favourite pasture, gathered a basket of herbs and buttercups (Ranunculus acris,) which she ate for supper. During the night she was taken with violent cholic, which she in vain tried to assuage with hot wine and brandy.

The following days the pains diminished so that she could go out, but was obliged to take to her bed soon after, and I was sent for on the 12th, in the morning.

I found her affected with jaundice, for which she was treated, and observed my directions for a few days; but, on one occasion, she gorged herself with wine and brandy. On the 5th August, she drank a bottle of brandy, and died within twenty-four hours after.

Autopsy. The stomach was small; its mucous membrane presented in parts, as well as that of the intestines, some inflamed points. We found no kind of worms. The liver was very voluminous; the bladder and uterus very small; Denise had not had any children. The contents of the chest healthy. The head was not opened, as it was to be preserved. It presented a remarkable peculiarity; the condyles of the inferior maxilla were almost entirely destroyed, which may easily be accounted for by recollecting that mastication had been continuous for nearly forty-two years. Denise was of ordinary height and size, of a purely sanguine constitution, though her limbs were of a pale whiteness and softness, which indicated the excess of the cellular tissue over the strength of muscles. Her gait, voice, and gestures, partook more of the man than of the female. Her eyes, though of a clear blue, had the character of those of the hyæna. The sexual feeling was for a long time excessive, and she experienced a slight attack of epilepsy whenever she had connexion.

Her conversation was brusque, unconnected, turning mostly on her appetite, and was but a tissue of lies. On one occasion she asserted she had eaten seventy-two pounds of bread in twenty-four hours, whilst, on the most exact calculation, it was found that thirty-six pounds, including soup, was the utmost she had ever taken. She acknowledged to have been in the habit of drinking every morning a glass of wormwood cordial, when she gorged herself constantly with strong liquors. Flowers had for her an irresistible attraction; many times has she followed for entire hours persons who have carried them.

Active, obliging, charitable, Denise gave at times money to the poor, but never any bread. Often commissioned by individuals to receive considerable sums of money, and at the same time to make purchases, Denise showed constantly the most scrupulous trustiness on these occasions. Her probity was never shaken at the sight of gold; but it failed her before a morsel of bread. One morning, in the streets, she observed a mason engaged, who had deposited his bread upon a stone near him. Denise had both money and bread in her basket; nevertheless, she ran away with the bread of this man as fast as she could. Some days after she came to me, and related the circumstance, asking me if she ought not to send five francs to the mason, whose dwelling she was acquainted with. I approved of her intention, and proposed that she should join a loaf with the money, to replace that she had taken. At the word, her features altered, swelled, the lower lip trembled with rage, her eye sparkled, foam ran from her mouth: "I will send him ten francs," said she in an angry tone, "fifteen, if you will, but never shall he have of me a morsel of bread."

Easily excited at all times, she became much more so after she had given herself up to drink: she changed her lodging beause a cat had, from the roof, looked at a soup she had put in the window to cool. On another occasion, her soup being partly upset in the fire, in order not to lose what remained, she swallowed it boiling, which occasioned that day five vomitings of blood. Finding herself one day shut in with a Mademoiselle D., in the library of the church of St. Geneviève, her first care was to examine the contents of the basket she was in the habit of carrying constantly, and finding in it only a pound of bread, fear of want carried her away so that she spoke in a most strange way, not knowing, said she, to what extremity hunger might lead her.

Already had she attempted to climb the walls to get to a high window, when, to her great joy, some one came to open the door. On another occasion, at my own house, I was bleeding a patient, when a large piece of bread which she held under her arm fell into the bason which received the blood; she took it out in great haste, and devoured it all covered with blood.

To resume, we might assert that this woman had lived entirely for digestion. During the first months of her life, she exhausted several nurses; as a child, she devoured the bread of her schoolfellows; as an adult, she ate day and night; becoming less voracious, she was continually in a state of drunkenness; struck with death, she wished to recover only to eat; at last, some moments before death, being no longer able to eat bread, "because," said she, "*le pain produisait mal au cœur*," she forced her sister to eat near her, almost in her mouth, and died, saying "Since the good God wishes I should no longer eat, at least I may have the pleasure of seeing eating."

Considered in a phrenological point of view, the cranium, which I have preserved, presented the organs in the following order of predominance: 1. Alimentiveness;[*] 2. Amativeness; 3. Combativeness; 4. Secretiveness; 5. Philoprogenitiveness; 6. Constructiveness; 7. Attachment; 8. Conscientiousness; 9. Firmness; 10. Individuality; 11. Form; 12. Locality; 13. Circumspection; this last very little developed.

Compared with fifteen crania, taken by chance by M. BROUSSAIS and myself, but two offered the organ of alimentativeness developed as large as one-third less than this organ in Denise, and these were the crania of men.—[*Broussais, Ann. de Medicine.*]

CLINIQUE MEDICALE DE PAVIE.

Itch successfully treated by Chlorate of Lime.

By Professor FANTONELLI.

THE professor states that, after having employed the above remedy with considerable success in his private practice, he determined to try its effects upon a more extended scale in the hospital. It was employed in eight cases of itch, which were admitted about the same time; six men and two women. The latter, in whom the whole surface of the body was covered with the eruption, were cured in six days. Of the six men, five were completely cured from the fifth to the eighth day; in one instance, a young man, sixteen years old, the eruption of itch was followed, while he was treated in the same manner, by general eczema, which was however speedily relieved by warm baths. The original disease then returned, and was cured by fumigations of sulphur.

The strength of the lotion employed for adults was from one ounce and a half to two ounces of the chlorate in a pint of common water, and with this solution the parts affected were rubbed three or four times a-day. For infants, an ounce of the chlorate in the same quantity of water. Every three days the patient should be put into a warm bath, in order to remove from the skin the deposition of lime that may have formed upon it, and to relieve the irritation sometimes produced by the remedy, when it is used too strong, or when it is too frequently applied. It rarely happens that by this means the itch is not cured in eight days; and the professor feels confident that it is the most certain, the most prompt, and the most economical, treatment that has hitherto been adopted.—[*Ann. Universali di Med.*]

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[*] The part of the brain in which this organ is situated is the most antero-lateral convolution of the middle lobe, immediately posterior to the fissura magna sylvii, at its lower part; when large, it swells out the squamous portion of the temporal bone above and in front of the external auditory meatus, and, with a little attention, may be distinguished under the temporal muscle, when its fibres are not in action; allowance being made for the obvious difference of thickness of the muscular fibres of the integuments covering them.

COLLECTANEA.

Floriferis ut apes in saltibus omnia libant,
Omnia nos, itidem, depascimur aurea dicta.

PHYSIOLOGY.

On the Umbilical Vesicle. By M. MAYER.

THE results from the observations of this author are, 1st, that, in the normal state, the umbilical vesicle of the human embryo remains visible from the commencement until the end of the entire development of this last. In the placenta of two full-grown twins, two vesicles are easily to be perceived. 2d. That the conduit of the umbilical vesicle becomes permeable only three or four weeks after the descent of the ovum into the uterus. 3d. That the vesicle contains no yellowish, powder-like substance; its conduit, besides being quite whole and permeable, is so narrow that it could serve but very little to the nutrition of the embryo, though the latter is of very small dimensions in the four first weeks of its development. Also it should be remarked, that the umbilical vesicle is large in the carnivora, while it is very small, and could scarcely contain any drops of liquid in the herbivora; in man it is small. 4th. Numerous observations lead us to conclude that the circulation of the blood continues for a long time in the omphalo-mesenteric vesicles; whilst the permeability of the conduit of the umbilical vesicle exists only until the third month of gestation. In a monstrous fœtus of the full time, the omphalo-mesenteric vesicles were very distinct in all their course.—[*Allgem. Medicinische Zeitung.*]

PATHOLOGY.

Pathology of the Nervous System. [From a Lecture of Professor GRAVES, Dublin.]—*London Med. and Surg. Journal.*

SOME circumstances have, of late, drawn my attention to the study of nervous pathology; and, as this is an interesting subject, and one on which my opinions differ from some of those generally received, a few remarks on this point may not, perhaps, be unacceptable. The observations I am about to make will involve the consideration of the general principles suited to guide us in the difficult study of nervous affections, rather than the description of any particular disease. In considering the symptoms that accompany diseases of the nerves, pathologists have directed their attention almost exclusively to the nervous centres, and have looked on the brain, cerebellum, and spinal cord as the parts in which the causes of all nervous disorders reside, or in which they originate.

If you examine the works of Rostan, Lallemand, Abercrombie, and all those who have written on diseases of the nervous system, you will find that their inquiries consist in searching after the causes of functional changes, either in the cerebrum, cerebellum, or spinal marrow, forgetting that these causes may be also resident in the nervous cords themselves, or their extremities, which I shall call their *circumferential parts.* When we recollect the manner in which the nervous system grows, when we call to mind the fact, that in the development of that system, during the fœtal state, the nervous extremities and trunks are formed before any traces of the brain are discernible, we must at once allow it is by no means improbable that these parts may become incapable of discharging their functions in consequence of changes originating in themselves, and not proceeding from the nervous centres. In a word, may not the decay and withering of the nervous tree commence occasionally in its extreme branches? and may not a blighting influence affect the latter, while the main trunk remains sound and unharmed? In fact, gentlemen, pathologists have, with respect to diseases of the nervous system, committed an error precisely similar to that which was so long prevalent with regard to diseases of the vascular system; for it is only lately that, in estimating the forces which influence the circulation in diseased parts, they have begun to appreciate the preponderating influence of the capillary vessels, independently of the heart's action and the vis a tergo. It is only lately that they have recognised the important truth, that diseased vascular action may commence in circumference.

I am willing to allow that, in most cases of general paralysis, the affection of the muscular system is produced by disease of the nervous centres; yet I think it is also evident, that an injury of the extremities, or circumferential parts of the nerves, may cause such a derangement of their functions as to give rise to paralysis. The reason why persons seek for the explanation of paralytic symptoms by referring them to the nervous centres rather than their peripheral extremities is, because this mode of inference accounts more satisfactorily for the simultaneous affection of many parts of the system. Thus, if one hemisphere of the brain, or both, or if the cerebellum or spinal cord be pressed or injured, those parts which have a nervous connexion with them will experience a corresponding derangement of function. But if a process of disordered action be set up in one part of the nervous extremities, and this passes on to another part, the translation seems very strange, and you cannot easily comprehend why paralysis of one peripheral part will produce the same disease in another. It has been asked, whether a local paralysis ever can, by spreading towards the centre of the nervous system, produce paralysis in another and a distant locality.* This is a question we are not in the habit of investigating; and I think it has never been sufficiently or satisfactorily examined, considering its importance in a practical point of view, and the new light which it may throw on many of the most obscure and perplexing forms of disease. I shall endeavour to prove, first, that paralysis (from whatsoever cause it may arise) affecting one portion of the circumferential extremities of the nerves, may also affect other portions of their extremities; secondly, that pain originating in one situation may produce a similar sensation in distant parts; and thirdly, that convulsions resulting from irritation in any part of the extremities of the nervous system may occasion a corresponding train of symptoms in other parts of the body. You perceive, gentlemen, that I have enumerated the three most remarkable symptoms resulting from disease of the nervous system, namely, paralysis, pain, and convulsions. If I succeed in showing that each of these may be produced by causes acting on the extremities of the nervous system at a distance from the part affected, the position I have advanced will be proved.

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* This question has not been discussed; although the French pathologists, when speaking of what they term the "paralysis of innervation," acknowledge the principle of paralysis existing independently of cerebral or spinal disease.

A few days ago, happening to call at a gentleman's house, I was told by a young lady that she had wounded the inside of the ring-finger with a blunt needle, and that she found in it a considerable degree of numbness and loss of sensation. I said to her, "your little finger is also numb." You are aware those two fingers are supplied by the same branch of the ulnar nerve. Well, the little finger was really numb, as well as the finger next to it, which had been injured. What were the circumstances of the case in this instance? The side of the ring-finger next to the little finger had been wounded with a blunt needle; the impression made on the nervous extremities of the side of one finger produced numbness not only in that finger, but also the same cause operated backwards, or towards the centre, so as to affect the branch given off to supply the little finger, by the ulnar nerve, above the place of the wound. Here is an instance of a cause producing numbness of a particular branch of nerve, occasioning the same affection in another branch, and giving rise to phenomena identical with those which might arise from an injury of the main branch of the ulnar nerve. This is a plain fact. You have a case of precisely the same paralysis in a poor woman in this hospital, who has been complaining of rheumatic pains in various parts of her body. Before I had been struck by these and other instances of the same kind, I looked for the cause of this paralysis in the trunk; now I can understand how it may be in the periphery. You recollect I made some observations before on this subject, and mentioned that this numbness is frequently remarked in cases of gout and rheumatism, and that this occurrence in old persons often excites apprehensions of approaching paralysis. I have known old gentlemen so alarmed by it as to seek medical advice; and, as this affection sometimes precedes gout, and sometimes accompanies rheumatic arthritis and phlegmasia dolens, it is a fact worthy of your attention, and one which I would recommend you to hold in memory, though I must confess I am not able to give any explanation of it. I have seen an attack of this peripheral paralysis in a gentleman of gouty habit, and heard him express a great deal of surprise when he was told by Mr. Kirby, his medical attendant, that it would usher in a fit of his complaint. This gentleman, however, after taking some warm stimulant medicine, went to bed, and next morning had a regular attack of gout. But, to return to our subject. If you make experiments by handling snow, or immersing your hands in freezing mixtures, or any fluid of very low temperature, you find that, after some time, the exposed parts lose first the power of sensation, and afterwards that of motion, and that in this way you produce a complete, though temporary local paralysis. Of this fact you are all aware. But what bears more strongly on the subject in question is that the paralysis thus induced is not merely confined to the hands and fingers, but also extends to other parts. You not only have the hands and fingers numb, but also lose, in a great degree, the power of flexion and extension, which is seated in the muscles of the fore-arm, and the motions of the wrist-joint are very imperfectly performed. Now all this time the muscles of the fore-arm, lying at a considerable depth, and covered by warm clothing, are protected from cold, and yet you perceive they partake in the paralytic affection of the exposed parts. Here, then, is another example of the same nature, corroborating our former position, that causes, producing loss of power in one part of the extremities of the nervous system, may have not merely a local influence, but also travel towards the centre and affect distant parts. Speaking of the influence of cold on the system, I have to observe, that, from the experiments made on this subject by Hunter, Edwards, Dr. Marshal Hall, and others, some instances of its effects seem very singular. One of the most remarkable is the production of paralysis, which, in most cases, is partial, but is sometimes very general without being followed by death. I remember the case of a dog, which lay buried in snow for two days, and was then taken out quite stiff and insensible, and thrown on a dunghill as if dead. After some time, the poor animal gave some symptoms of reanimation, and finally recovered. The influence of cold has been alluded to by Dr. Abercrombie, and you will find, that he mentions a case of paraplegia, arising from paralysis brought on by cold, which lasted for eight months. A blast of cold air on one side of the face has been known to cause paralysis and distortion of several months' duration. Again, you have, as in the case of a man in this hospital, paralysis of the lower extremities from exposing the feet to cold and wet, while employed in baling out water in a quarry. You may have observed the same thing brought on by similar exposure in fishing, or snipe-shooting, and that such causes gave rise to paralysis, not only in the parts subjected to the influence of diminished temperature and wet, but even extended to the nervous centres, so as to produce decided paraplegia. I was once myself exposed to a very intense degree of cold on board a ship, and observed that the sailors who had been most exposed suffered severely, and did not recover from its effects during the rest of our voyage. In fact, many months will often pass away before the symptoms arising from cold are removed, and you will find, that, in addition to the case of paraplegia from cold, which lasted eight months, Dr. Abercrombie mentions another, in which the paralysis was permanent.

One of the most remarkable examples of disease of the nervous system, commencing in the extremities, and having no connexion with lesions of the brain, or spinal marrow, was the curious *epidémie de Paris*, which occurred in the spring of 1828. Chomel has described this epidemic in the 9th Number of the Journal Hebdomadaire, and having witnessed it myself, in the months of July and August of the same year, I can bear testimony to the ability and accuracy of his description. It began (frequently in persons of good constitution) with sensations of pricking and severe pain in the integuments of the hands and feet, accompanied by so acute a degree of sensibility, that the patients oould not bear those parts to be touched by the bed-clothes. After some time, a few days, or even a few hours, a diminution, or even abolition of sensation took place in the affected members, they became incapable of distinguishing the shape, texture, or temperature of bodies, the power of motion declined, and finally they were observed to become altogether paralytic. The injury was not confined to the hands and feet alone, but advancing, with progressive pace, extended over the whole of both extremities. Persons lay in bed powerless and helpless, and continued in this state for weeks, and even months. Every remedy which the ingenuity of the French practitioners could suggest was tried, and proved ineffectual. In some, the stomach and bowels were deranged, and this affection terminated in a bad state of health, and even in death; in others, the vital organs, cerebral, respiratory, and digestive, were in the same state as before their illness, and their appetites were good, but still they remained paralytics. At last, at some period of the disease, motion and sensation gradually returned, and a recovery generally took place, although, in some instances, the paralysis was very capricious, vanishing and again re-appearing. The French pathologists, you may be sure, searched anxiously, in the nervous centres, for the cause of this strange disorder, but could find none; there was no evident lesion, functional or organic, discoverable in the brain, cerebellum, or spinal marrow. Now, here is another remarkable instance of paralysis creeping from the extremities towards the centre; here is a paralysis affecting all parts of the extremities as completely as if it had its origin in the central parts of the nervous system, and can any one, with such palpable evidences before him, hesitate to believe, that paralysis, or even hemiplegia, without any lesion of the brain, or spinal cord, may arise from disease commencing and originating in the nervous extremities alone? I may observe, *en passant*, that where paralysis simultaneously attacks the arm and leg of the same side, it arises from an impression on the nervous centres, but this, I think, does not hold where the paralysis is creeping, as in the case before me, which has been taken by Mr. Hudson, and is at present under the care of my colleague, Dr. Stokes. "The patient, James Moore, was admitted on the 3d of March, labouring under paraplegia, which he attributed to cold and wet. About a month before admission, he first perceived a stiffness of the great toe of the right foot, afterwards numbness and coldness of the sole, and then of the leg as far as the knee, and dragging of the limb in walking. During the progression of the disease up along the thigh, it commenced in the left foot, and, after a few days, he experienced almost complete paralysis of sensation in the right lower extremity, and a lesser degree in the left, accompanied by so much diminution of the power of motion, as to render him unable to walk without support. About three weeks after the appearance of paralysis in the lower extremities, the little finger of the right hand was attacked with numbness, which passed successively to the rest, attended by some loss of the sense of touch and power of grasping objects. He has also had retention of urine, and the bowels were obstinately constipated. There was no tenderness of any part of the spine. He had no pain in the head. His pupils were natural, mind unaffected, pulse, sleep, and appetite also natural." Here, gentlemen, you have an instance of what I would term creeping paralysis, having its origin evidently in an affection of the peripheral extremities of the nerves.

I may now observe, that I have brought forward instances to prove, that direct injury of one part of the nervous system may produce paralysis in another and distant part; but have we not also other instances? Certain substances, which produce morbid effects on the nervous system, are found to be attended by results analogous to those described. You are all aware that lead frequently brings on paralysis; that this is caused by the local application of lead, and that the effect of the local application extends chiefly to those parts to which the lead is directly applied. Thus, in painter's cholic, the paralysis almost invariably begins in the hand and wrists, preceded, I will allow, in many cases, by symptoms of poisoning of the system, as shown by the tormina and affection of the intestinal canal. Dr. Bright has remarked, that, in painter's cholic, the spine is frequently tender in the cervical region, when the upper, and in the lumbar, when the lower extremities are affected. It has been remarked, that spinal tenderness is often the consequence of disease of the extremities, and not the cause; so, I think, it is in painter's cholic. We found, in this hospital, a great number of cases, in which there was paralysis of the upper extremities without any spinal tenderness in the commencement; but when the disease had lasted for some time, the affection seemed to spread towards the spinal column. When this took place, it generally caused an aggravation of the disease; but it is no less true, that we had many instances where it could not be discovered; and you are not to think that this irritation of the spinal cord should always precede the paralytic affection of the wrist and hand, which is observed in painter's cholic. You have seen, in this hospital, two cases of spinal tenderness supervening on peritonitis and acute gastric irritation; and, in fact, in every disease in which the nervous extremities, which are distributed to the parietes, or viscera of the abdomen, you find almost invariably that, after some time, there will be pain and tenderness of the spinal column, as the consequence of those diseases. On the other hand, I grant, that as soon as the spine becomes affected, whether the disease be tympanitis, peritonitis, or that swelling of the belly to which the name of hysterical meteorism is applied, there will be certainly an aggravation of the existing symptoms.

You perceive this conducts us to the solution of the question, how far, in the treatment of chronic complaints, are we to consider spinal neuralgia as the cause or consequence of the disease. Sometimes those troublesome hysterical affections, which you are called on to treat, are preceded by spinal neuralgia, but in many well-marked cases it is totally absent. I wish to call your attention to this subject, because medical men have been biassed, to a very considerable extent, by the statements made by Mr. Teale, and others, respecting the treatment of various anomalous affections, supposed to be connected with irritation in the spinal column. Every female who complains of any kind of abdominal or pectoral symptoms of an obscure nature is examined all over the spine, and if the slightest tenderness be detected, according to the practice generally pursued, you are to leech and blister her back, or to apply tartar emetic ointment. I think I have seen injurious effects from this plan of treatment. Inquire carefully into the history of the case, and ascertain, if possible, whether it was the central or circumferential parts which were first affected, for, in the latter case, you can promise yourselves less from any local application to the spine than in the former; whereas, in those instances where the disease has travelled from the centre to the circumference, you may hope for success from local applications. It is important to recollect, gentlemen, that violent enteritic affections may produce paralysis of the lower extremities. In the case of a young gentleman, whose disease arose from obstruction in consequence of eating nuts, and to which I formerly adverted, violent enteritis and peritonitis arose, and he had two relapses; from these he recovered with difficulty, but they left him paralytic of his lower extremities. After two months, the paralysis speedily yielded to the application of stimulating liniments. This case Mr. Kirby and Mr. Cusack saw. In another remarkable case, concerning which I was consulted by Dr. Ireland, a frequently recurring vomiting was in the end followed by a paralysis of the lower extremities; but as I mean to publish the particulars of this case, I shall say no more of it at present.

What I wish to impress upon your attention is, that pain, numbness, spasm, and loss of power from an affection of the circumferential parts of the nerves, may commence in those extremities, and be propagated towards the centre, so as to be finally confounded with diseases originating in the central parts themselves. You have seen in the patient, James Moore, hemiplegia, which I am convinced had its origin in the extremities. Have you not also seen, in the cases of peritonitis, gastric irritation, and painter's cholic, a consecutive affection of the spine? Indeed, it frequently happens that paralysis, commencing in the nervous extremities, may not only induce disease of the spine, but in time bring on disease of the brain itself. It does not follow that a fatal paralysis affecting the brain should commence in that organ. In Dr. Woolaston's case, are we to account for the occasional partial amaurosis under which he laboured, for such a length of time before his death, by referring it to disease of the brain? In consequence of a temporary paralysis of one half of the retina of each side, he saw but the halves of objects, and from this he argued, that there was a semi-decussation of the optic nerves. This happened several times, but never remained for any length of time, and I do not think that at that period it was proved that any disease existed in the brain.* Some time back, I saw, with Dr. Brereton, a very singular example of defective vision in a wealthy bookseller, who had lost the sight of one eye from accident. This gentleman, one day, in going up a hill near Clonskeigh, remarked, that where there was but one man, he saw two men, but divided at the middle, as if they were cut by a vertical line into two halves. I questioned him closely on the occurrence, thinking it to be the effect of imagination, but he said this was not the cause, and that he was perfectly convinced he saw double. There is but one way of accounting for this optical delusion. It is well known that when vision is much impaired, the power of seeing light often remains, when the eye cannot distinguish any particular object. A partial and temporary paralysis of the retina, in a vertical section, may have given rise to an apparent white line, bisecting the object vertically. Again; in the case of a fine young lady, whom I saw along with Dr. Beatty, amaurosis, acute, sudden, and complete, came on without any headach or cerebral symptoms being complained of. When called to see her, I found her walking about the drawing-room, quite cheerful, and enjoying a good appetite, but perfectly blind. After the lapse of some days, these symptoms were followed by profound coma and death. But there are other instances more decidedly corroborative of the positions I have laid down. You all know that if a man gets a blow or cut on the forehead, which wounds or divides the frontal nerve, not only the parts which that nerve supplies become paralytic, but that also the diseased impression, thus produced, spreads towards the centre, affects those nerves which anastomose with the frontal, and, by means of the communication formed between the nerves of the eye-ball, through the lenticular ganglion, deranges the functions of the optic nerve and causes amaurosis. Formerly I was in the habit of giving a different account of this, and thought that, because, in some of the lower classes of animals, as for instance the mole, the fifth nerve, from which the frontal is derived, is the true nerve of vision, those animals having no optic nerve,* I had found an analogy capable of giving an explanation of the fact, that injury of the frontal nerve is sometimes followed by blindness. But this, I am of opinion, cannot be the true mode of accounting for the amaurosis, as I can now readily conceive how injury of any other nerve, having communication with the optic, may spread inwards, and finally derange or destroy its functions.

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* I do not lay much stress on this case, as the organic disease found after death was so considerable. In connexion with the next, however, it is interesting.

You will frequently observe persons in the decline of life, who otherwise enjoy tolerable health, exhibiting, as it were, a slight shade of paralytic affection of the system, fitful and capricious in its appearance and duration, sometimes remarked on every instance of corporeal exertion, sometimes scarcely at all, presenting at one time a reiteration of successive attacks, and at another time being totally absent for months. Some cases of this kind I have studied for months, and one in particular for years. The gentleman, who was the subject of the latter, complained of barely perceptible weakness, and dragging of one of his legs whenever he was tired; but, if he took a glass of wine on coming home, he got quite well, and these symptoms disappeared. Matters went on in this way for a considerable length of time, the paralysis being at one time in one leg and then in the other. At last he got a paralytic stroke, which lasted for some time, and then subsided. He next got confirmed paralysis of one side, and, soon after this, was carried off by an attack on the brain. You will often find persons similarly affected with paralytic attacks of the extremities; at first slight and transient, but afterwards increasing in vigour and intensity, until they terminate in ramollissement or effusion. Formerly I was of opinion, that this fugitive and shifting paralysis depended upon local congestion in the brain, and others have attributed it to effusion; but this is not the fact. Persons may die after having laboured for some time under hemiplegia, and yet no trace of lesion of the cerebral mass could be detected; and why? Because many of them are cases of this creeping paralysis, commencing in the peripheral extremities, and travelling gradually towards the centres of the nervous system.

It is only on the principle of there being such a disease as local paralysis not induced by lesions of the nervous centres, that we explain the origin and nature of such cases as paralysis of the deltoid, concerning which Dr. Elliotson has made so many interesting observations. It is by reference to this hypothesis alone, that we can account for the following cases, detailed by Dr. Cooke, in his admirable work on palsy:

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* A curious instance of the total absence, or imperfection, of a pair of nerves, is related by the Rev. Mr. Bree, in the Magazine of Natural History: "A white cat, of the Persian breed, was kept in his family as a favourite. The animal was a female, quite white, and perfectly deaf. She produced, at various times, many litters of kittens, of which some were quite white, others more or less mottled, tabby, &c. &c. But the extraordinary circumstance is, that of the offspring produced at one and the same birth, such as were like the mother, entirely white, were, like her, invariably deaf; while those that had the least speck of colour on their fur, as invariably possessed the usual faculty of hearing."

"I have lately had an opportunity of seeing a case of anomalous hemiplegia, attended by circumstances not less extraordinary than those above described. An officer of high rank in the army, who is now about sixty years of age, was, in the year 1795, affected with a diminution of power in the right hand. This complaint increased, notwithstanding a variety of modes of treatment, till the year 1800; when, after a course of mercury, recommended by Mr. Cline, its further progress was stopped, since which time the disease has remained stationary. The peculiar circumstances of this case are the following. The muscles of the left arm, from the shoulder to the elbow, are much wasted, and greatly diminished in power; while the muscles of the fore-arm are not at all lessened in size, and but little in power. The state of the right side is just the reverse, the muscles of the upper arm being of their natural size, and possessing their full power; whilst those of the fore-arm are very much wasted, and their motion, especially that of the fingers, is almost entirely abolished. In all other respects, this gentleman appears to be perfectly well. No cause for this disease can be assigned, nor did any method of treatment afford the smallest relief, till the mercurial course was adopted, when the progress of the disorder was arrested in the year above-mentioned. Since that time no attempts to remove the complaint have been made, yet it does not increase.

"In a late publication by Mons. Keratry, a case of general palsy is related, the circumstances of which are very extraordinary. This case is adduced with a view of showing how little residue of animal existence is sufficient for the preservation of the intelligent being. There is now living, he says, in D'Isle et Vilaine, a person, who, after having been blind for ten years, lost also the sense of hearing, and, in a little time afterwards, became almost universally paralytic. He was entirely deprived of the use of his arms, legs, thighs, and of the whole exterior surface of the body, with the exception of a part of the face; but the power of speech, and the functions of respiration, circulation, and digestion remained. Under these deplorable circumstances, however, he is not, says Mons. Keratry, wholly without consolation, for a sort of intercourse is preserved with his family and friends, by means of characters traced on that part which still retains its sensibility, and in this state of unexampled misery, he retains, in some degree, the distinguishing character of man—intelligence."*

I saw, the other day, with Mr. Crampton, a case of paralysis, in which the mouth was drawn upwards and to one side, accompanied by ptosis of the upper eyelid of the same side, so as to produce very great distortion. Mr. Crampton, with his usual decision, said,

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* Inductions Morales et Physiologiques, p. 375.

"put a blister here and there, here and then there, and you set things to rights," marking out, at the same time, a space over each of the principal trunks of the fifth nerve, which are expanded over the side of the face. It happened exactly as he predicted; the first blister we applied pulled up the eyelid, the next partially rectified the distortion of the mouth, and the third made it quite straight. Now, the phenomena of this case and its treatment cannot be explained by supposing the paralysis to arise from disease of the brain; but if, on the other hand, you consider the disease as originating in the nervous extremities themselves, how easy will it be to account for the mode of operation.

So far of paralysis, gentlemen, for I perceive our time has expired. I trust, however, that I have brought forward a sufficient number of examples in proof of the position with which I set out, that diseases may commence in the circumferential parts of the nervous system, and may extend not only to other parts of the branches or extremities, but even travel towards the centre, and finally affect the brain or spinal cord. The consideration of this subject opens a vast field for investigation, and may, perhaps, form an additional clue to discovery of the nature and treatment of a most obscure and difficult class of diseases.

PRACTICAL MEDICINE.

Case in which a large Dose of Camphor was taken. By G. Eickhorn, M.D. (Communicated in a Letter to Dr. Hays.)

I have read this morning, in the sixth volume of your Journal, page 236, a notice of a case in which a large dose of camphor had been taken, and as I have had an opportunity of experiencing in my own person the effects of such a dose of that article, and as the results in my case differed in many respects from the one you have noticed, a narrative of the symptoms I experienced may not be uninteresting.

In 1817, during the wet month of November, (in Germany,) I was attacked with cold in the head and a severe cough. One evening I took a lump of camphor, about the size of my thumb, and rubbed it down with sugar, with the intention of taking a little of it occasionally, and left it in the mortar covered with a sheet of paper; it was about six o'clock, I sat alone, and being unable to read, because my eyes were swimming in tears, time passed very tediously, and I therefore took without reflection, from time to time, a teaspoonful from under the cover without lifting it, till about nine o'clock, when I perceived the mortar almost empty; I had taken at least two-thirds of the whole. The idea then rushed to my mind that I had perhaps poisoned myself; but as I did not feel any ill effects, I resolved to wait till such symptoms should ensue as might call for interference. I accordingly went to bed, taking with me laudanum and diluted sulphuric acid. I had not been half an hour in bed before I began to feel warmer and warmer, till I experienced a burning heat, and at the same time my heart throbbed more and more frequently till it was impossible to count the pulse, but unattended with any uneasiness in the head. I never felt better; never were my ideas more lively or clearer; it appeared as if my intellectual powers were increased, and certainly champagne never brought on a more pleasing intoxication. In this situation I passed about an hour and a half, or two hours, when my skin began to grow moist; soon after my pulse became slower, and I fell asleep. The next morning I awoke miserably weak, the sweat having penetrated to the lower side of the feather bed, and my shirt and clothes were drenched. My cold and cough were just as the evening before. I took a lump of camphor about the same size, and found it to weigh nearly ʒiij., and supposing the powder left in the mortar to have been the third part, I had taken ʒij. or 120 grains.

The difference between the two cases as to the symptoms is indeed great; in the case at Breslau the pulse was hard; in mine this did not occur, and the frequency was so great, that I cannot conceive how the pulse could have become hard; then, in the case alluded to, the pulse was full; in mine it was small in accordance with its frequency; there was heaviness of the head; my head felt rather light: anxiety and agitation were experienced in the other instance; I have never felt more exhilarated and comfortable: the individual at Breslau suffered violent heat in the stomach; I did not experience any uneasy sensation in that organ; and as to the senses, I remember only that I could perceive the pulsation of the arteries in the ear, but without any disagreeable sensation. I do not recollect any derangement in the function of the bladder, and therefore suppose there was none. The difference in the symptoms may be accounted for by my having taken the camphor unmixed with any article capable of modifying its effects, whilst by the individual at Breslau the substance was taken dissolved in four ounces of brandy, to which last article I think many of the symptoms are to be ascribed.—*American Journal of the Med. Sciences.*

PRACTICAL SURGERY.

External Iliac Artery successfully tied. By JAMES C. HALL, M.D., of Washington City.

THE feasibility of tying the external iliac artery is so well established, that the following operation is deemed worthy of record only from its having been performed under circumstances extremely unfavorable to success.

Oct. 5, 1831. I saw George Snow, a labourer, age thirty-five, of intemperate habits; now confined to his bed; reduced in flesh; haggard in appearance; digestive functions impaired. He relates, that three months since, in lifting a heavy burden, he felt something give way in his thigh, and in two or three days afterwards he noticed a small tumor in the upper and inner part of the limb, and that it has unremittingly continued to increase. At this time the left thigh is four times by admeasurement the size of the other, and the leg, ankle, and foot are highly œdematous and varicose. Upon the anterior part of the thigh is presented a tumor, extending from Poupart's ligament, and the superior spine of the ilium, one third or more of the way downwards, elastic, resisting and strongly pulsatile; it is of a dark-bluish colour, and this not truly pointed; has a prominence when the impulse of the blood is forcibly felt, and produces the impression that here the parietes are very thin. The pulsation is evident on a very wide surface, and by means of the stethoscope is discovered, high up in the iliac fossa, where also there is much fulness. Here two symptoms give the case a formidable and almost desperate character, rendering it very doubtful whether the rupture in the artery has occurred above or below Poupart's ligament; but, as the pressure of the finger upon the iliac artery arrests the pulsation, and as the prominence of the tumor is below the groin, I feel authorized in thinking that the disease is diffused aneurism arising from a rupture of the femoral artery; that the iliac artery is sound, and may therefore be safely tied. This day the temperature of the affected limb is 84° between the toes, and 86° at the inner part of the thigh, that of the sound limb is 94° and 96° at the corresponding points. There is a general numbness of the thigh, with a severe and constant pain about the knee; pulse ninety.

Oct. 6th. Pulse 114; in other respects no change.

Oct. 7th. Drs. Dacoes, Warfield, and Collins, examined the case, and concurred in opinion with me that the operation of tying the external iliac artery gave the only hope of escape from an early death.

This operation I proceeded immediately to perform in the mode recommended by Sir A. Cooper; but, as the processes of the ilium and the line of Poupart's ligament were completely obscured by the swelling, the location of my incision was necessarily uncertain. It commenced at a point opposite to and distant from the superior spine of the ilium about one inch, and extending with a gentle curve downwards, terminated on the outer side of the external abdominal ring. The artery was found, and proved to be sound, but great difficulty was experienced in passing the ligature, owing to the very great toughness of the substance connecting it with the vein. The needle in Physick's artery-forceps twisted and broke in attempting to pierce this fascia, and finally I was compelled to pass a knife-handle under the artery, upon the extremity of which I cautiously made an incision. With Gibson's instrument I then passed the ligature, which was tied singly. Four other vessels were tied. The peritoneum was not injured.[*] The pulsation in the tumor immediately ceased, but there was no perceptible diminution in size. The wound was dressed simply; the whole limb invested in carded cotton, and laid in a flexed position.

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[*] The great strength of the living peritoneum is proved by the following singular accident. Mr. Rodney, age twenty-five, sitting on a boy's sled, rapidly descended a frozen surface, and came in contact with a blunt stick, an inch

Three hours after operation, pulse 120; temperature of left limb 85°; of the other 91°; has some griping near the wound; limb numb; pain at knee severe, insensible to friction, general aspect natural. At one o'clock A.M. slight bleeding at nose; shortly after slept.

Oct. 8th. At seven A.M. complained of a "heaving" sensation, which was relieved by a mouthful of weak toddy. At eleven A.M. feels well; aspect natural; no appetite; no thirst; tongue clear; pulse 116. Pain in knee diminished, but yet severe, circumference on tumor the same; other parts of limb much diminished; veins moderately full, temperature in both limbs 87°. At two P.M. great agony in limb, which is affected in succession with the sensations of hot embers being upon it, of the pouring of hot water, and the pricking of many needles; complains of nausea and giddiness.

Oct. 9th. Limb much reduced, but not the tumor; numbness ceased; pain much relieved; pulsation thought to be discovered in the anterior tibial artery. Wound nearly closed through its whole extent, having only a little pus and flakes of lymph upon its edges.

At six P.M., after the operation of oil taken in the morning, he complained of a sensation in the abdomen "like that of a 50lb. weight going up and down," and, upon the hand being applied, the aorta could be felt strongly beating. At ten P.M. laudanum was given to arrest the operation of the oil and calm his irritation.

Oct. 10th. Pulse varied from 100 to 116; temperature nearly equal in both limbs. Applied frictions and warm envelopes to remove coldness of leg.

Oct. 11th. Beating sensation above wound.

Oct. 12th. Not so well; wound sore; "much beating and throbbing in middle of leg."

Oct. 15th. His bowels disordered; dark and fœtid stools. Ordered calomel and opium.

From this time no change worthy of record occurred. The œdema rapidly disappeared, while the tumor formed by the coagulated blood very slowly decreased under the use of stimulating frictions. The pain of the knee, depending probably upon pressure made upon the nerves, could only be alleviated. The wound remained generally in a healthy condition, though the healing process was not as rapid as at first promised. Upon the 22d day the ligature came away. The patient continued to do well in every respect, and, though the limb is not entirely reduced to its natural

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broad and half an inch thick: it entered by the side of the rectum, and penetrated six inches. He withdrew it himself: there was a gush of blood; he fainted, and died in thirty-one hours. I did not see him till after death, when, upon examination, I found that the stick had passed between the rectum, peritoneum, and sacrum, and had wounded the primitive iliac just at its bifurcation. The peritoneum was not wounded at all.

standard, no doubt remains that it will be perfectly restored. To the assiduity and skill of Dr. Barry, who attended during the after-treatment, I am much indebted for the happy termination of this case.—*Ibid.*

INTELLIGENCE.

THE EPIDEMIC INFLUENZA.

During nearly the whole of this month, a severe catarrhal epidemic has very generally prevailed in London, and many other parts of the country. But few persons have altogether escaped its influence, although in many the symptoms have been so mild as to require for their relief and removal little more than the ordinary domestic remedies. In those, however, who had suffered previously from pulmonary complaints, the epidemic has in many instances been very severe, and not unfrequently fatal. Several cases have fallen under our own care, in which the patients, who had before been subject to bronchitis and asthmatic diseases, have been placed in danger by the attack of the prevailing malady. In the course of the last fortnight we have seen upwards of 150 cases; and, if we are to credit the reports we have heard, this is but a small number in comparison with that which has fallen to the share of many other practitioners. The disease has usually commenced with headach and a general feeling of oppression; febrile symptoms of greater or less severity, modified of course by the previous state and constitution of the patient, has quickly followed; cough, hoarseness, and soreness of the throat, with sometimes slight inflammation of the eyes, have either at first attended the febrile accession, or speedily succeeded it. In many instances the patient has complained of great lassitude, and a feeling of general soreness over the whole surface of the body; with pains in the arms and legs. The cough has generally been violent and tedious.

As far as our own observation extends, children have been much less subject to the disease than adults, and females much more so than males.

We are not aware that it has proved fatal in any case where the patient was before the attack in good health. We know that many fatal cases have been mentioned, but we have found, upon inquiry, that in all these instances the patients were invalids at the period of their being attacked with the epidemic, or far advanced in age, and likely to fall victims to any disturbance of their feeble and worn-out constitutions.

It has of course been found necessary to vary the treatment according to the age and constitution of the patient. With very few exceptions, however, general bleeding has not been required, and, when it has been unnecessarily employed, great depression has followed, and but little alleviation of the cough and oppression of the chest has been obtained by it. Mild purgatives, saline diaphoretics, occasional warm drinks, and confinement to bed for a few days, has appeared to be the most effectual and beneficial mode of treatment. An opiate at bedtime has generally been given with advantage. The disease is now on the decline, but in many persons who have been attacked the harassing cough continues, and appears to be but little under the control of ordinary remedies.

Many persons, who have imprudently exposed themselves to cold soon after the attack, have suffered from severe relapses, the management of which we have found much more difficult than the original disease.

London Medical Society Prizes. The following subjects are fixed upon; essays to be sent on or before the 1st December in each year: 1834, Diseases of the Urethra; 1835, Pathology and Treatment of Puerperal Fever.

The Jacksonian Prize for 1832, offered for the best essay on the Mode of Union in Simple and Compound Fractures, was awarded by the Council of the College of Surgeons, to Benjamin Phillips, Esq., of Wimpole street, Cavendish square.

At a meeting of the Council of the Medico-Botanical Society of London, held 12th February, 1833, Earl Stanhope, President, in the chair,

It was resolved, That the Gold Medal of the Society shall be offered for the best Essay in the English, French, German, or Latin language, on the question, "What is the vegetable substance which could be employed with success as a substitute for mercury in the cure of Syphilis, or of diseases of the Liver?" and that the Silver Medal of the Society shall be offered for the best Essay "On the medicinal qualities and uses of any indigenous plant which is not yet sufficiently known, or on new uses and applications of any other indigenous plants," provided that such Essay possesses sufficient merit; and that they shall be received till the close of the year 1834; and that the medals shall be bestowed at the anniversary, January 16th, 1835.

That each essay shall be accompanied by a sealed paper, containing the name and address of the author, and marked in the same manner as the essay; and that each essay to which a medal is not awarded shall, according to the wish of the author, be restored to him, or submitted to the Council, in order to its being read at a general meeting.

By order of the Council,

George Glendinning, Secretary.

Professor Burnett will deliver a course of Lectures on Botany, at the Royal Institution of Great Britain, commencing on Tuesday the 21st of May. The following is an outline of the series.

§. VEGETABLE METAMORPHOSIS.

I. EPIGENESIS PLANTARUM, OR TRANSITIONAL METAMORPHOSIS, INCLUDING THE REGULAR AND ORDINARY EVOLUTIONS OF STRUCTURE.

May 21st. *The four ages of plants.* The seed, the herb, the flower-bud, and the fruit of vegetables; analogous to the egg, the larvæ, the chrysalis, and the imago states of insects. These epochs often marked by notable changes of form, character, and function.

May 28th. *Accommodation to external physical influences.* Acclimation, forcing, unseasonable development. Apparent perceptivity in vegetables.

II. PROLEPSIS PLANTARUM, OR METASTATIC METAMORPHOSIS; including the irregular and compensating developments.

June 4th. *Abnormal evolutions of root and stem.* Aërial roots; fasciculate and spiral stems; anomalous branches; foliar construction of stems and boughs; abortive buds and branches; thorns, spinacules, &c.

June 11th. *Abnormal development of buds.* Adventitious germs; arrest of development in the foliage forming the scales of the hybernacle, phyllodia, tendrils, &c., and causing the relapse of bracteæ, sepals, petals, stamens, pistils, and fruit, into leaves.

III. ANAMORPHOSIS PLANTARUM, OR ADVENTITIOUS METAMORPHOSIS; INCLUDING EXTRAORDINARY AND CASUAL TRANSFORMATIONS.

June 18th. *Changes wrought in plants by chance and culture.* Preternatural development and abortion of roots, stems, buds, leaf-stalks, leaves, flower-stalks, flowers, fruits, and seeds; hypertrophy and atrophy of these several parts.

June 25th. *Limits of the transformations observable in plants.* Appetency for improvement; no tendency to absolute change; difficulty of preserving casual varieties. Are new parts or organs ever formed? Are plants convertible into each other, or into animals of any grade? Doctrine of progressive perfectibility considered.

NEW ZEALAND HEADS.

It may not be generally known that the importation of New Zealander's heads is now entirely prohibited. By the late Act, which regulated the duties to be levied on anatomical preparations, an express provision is made, that not any duty, however high, shall permit them to pass; for, revolting as the statement may appear, these chiefs were absolutely being murdered to supply the cabinets of European virtuosi; and so profitable had the trade become, and so great was the demand, that no New Zealander's head was safe upon his shoulders, if within the reach of a trader's swivel.

Since writing the above, we have noticed the following paragraph, which has been copied into our journals from the "Sydney Herald."

"*Dangerou Cargo.* A very severe encounter took place, a short time ago, betwixt one of our colonial schooners, and a party of New Zealanders. It appears that this vessel, during her last trip to Sydney, had procured a number of native heads, and also brought up a chief with them. While the chief was on board, the captain had occasion to overhaul his stock of heads, and they were incautiously exposed to the view of his companion. The chief caught a glimpse of them, and recognized the heads of some of his own relatives. He said but little at the time, but, when he returned to the islands, he procured a party to resent the insult given him. They immediately commenced firing upon the schooner, and a regular fire was kept up between both parties for some time, when the vessel weighed anchor, and sheered off. It is more than probable that, if the schooner had not crowded all sail, the captain and crew would have been sacrificed, and an exchange of heads taken place."—[*Sydney Herald*, Aug. 2.]

Baron Heurteloup performed the operation of Lithotripsy, on Saturday last, before a numerous assemblage of medical men and students, in the theatre of St. Bartholomew's Hospital, on a patient of Mr. Earle. The patient was a middle-aged man; the stone was seized and crushed with the greatest ease; and all present were astonished at the Baron's dexterity.

LITERARY INTELLIGENCE.

In the press, and speedily will be published, a Translation of the celebrated Work of Rayer on the Diseases of the Skin, by Wm. Dickinson, Esq., Surgeon.

MONTHLY LIST OF MEDICAL BOOKS.

[*Medical Works cannot be entered on this List unless a copy be sent for the purpose, the titles of Books having frequently been sent to us as published, which have not appeared for weeks, or even months, after.*]

A Plain Account of Vaccination, designed for the Heads of Families, wherein the History, Advantages, and Errors of this Subject are popularly treated. By A. B. C. pp. 58. London, Renshaw and Rush.

Part XV. (April.) The Cyclopædia of Practical Medicine. Edited by John Forbes, M.D., F.R.S., &c., Alex. Tweedie, M.D., &c., and John Conolly, M.D., &c. Containing *Menstruation* (concluded), by Dr. Locock; *Miliaria*, Dr. Tweedie; *Mortification*, Dr. Carswell; *Narcotics*, Dr. A. D. Thomson; *Nephralgia*, and *Nephritis*, Dr. H. W. Carter; *Neuralgia*, Dr. Elliotson; *Noli me Tangere*, or *Lupus*, Dr. Houghton; *Nyctalopia*, Dr. Grant; *Obesity*, Dr. Williams; *Œdema*, Dr. Derwall; *Ophthalmia*, Dr. Jacob: *Otalgia*, and *Otitis*, Dr. Burne; *Ovaria, Diseases of the*, Dr. Lee; *Palpitation*, Dr. Hope; *Pancreas, Diseases of*, Dr. Carter; *Paralysis*, Dr. R. B. Todd.—Large 8vo. pp. 137. Sherwood and Co., London.

Part XVII. The Principles and Practice of Obstetric Medicine, in a Series of Systematic Dissertations on Midwifery and on the Diseases of Women and Children. Illustrated by numerous Plates. By D. D. Davis, M.D., M.R.S.L., Professor of Midwifery in the University of London, &c.—4to. John Taylor, London.

A Treatise on the Venereal Disease, and its Varieties. By Wm. Wallace, M.R.I.A. &c., Surgeon to the Jervis-street Infirmary, Dublin.—8vo. pp. 382. Burgess and Hill, London.

Observations on Impediments of Speech, with some Remarks on their successful Treatment; in a Letter addressed to T. J. Pettigrew, Esq. F.R.S. &c. By Richard Cull.—8vo. pp. 32.—Renshaw and Rush, London.

The Black Death in the Fourteenth Century; from the German of J. F. C. Hecker, M.D. &c. Translated by B. G. Babington, M.D.—12mo. pp. 206. Schloss, London.

Succinct Practical Observations on the Effects of Bloodletting; containing an Investigation of the Practice of General and Local Abstraction of Blood; also how far Leeches may be efficacious, independently of the Evacuations they produce. To which are added, Observations on Visceral Inflammation after Parturition. By E. Geoghegan, M.R.C.S.I. &c.—8vo. pp. 60. Longman, London.

A List of Persons who have obtained Certificates of their Fitness and Qualification to practise as Apothecaries, from August 1st, 1815, to July 31, 1832; agreeably to the Act 55 Geo. III.—London.

Regulations to be observed by Students intending to qualify themselves to practise as Apothecaries in England and Wales. 1832.

APOTHECARIES' HALL.

NAMES OF GENTLEMEN to each of whom the Court of Examiners have granted Certificates:

MARCH 28.

Frederick Bastone, of Minehead
James Burrow, Manchester
Clark Duchesne, London
Mark Brown Garrett, Shaftsbury
Henry Robert Jenkins, Peterborough
Robert Poynts M'Donald, Bristol
John Crook Rumsey, Beaconsfield
Patrick Reilly
Wm. Kenrick Watson, Stourport

APRIL 4.

Samuel Sanders, of London
John Storrar
Wm. John Stephens Tuckwell, Burford

APRIL 9.

Wm. John Craken Grierson
Samuel La Mert, Spitalfields
David Thomas Morton, Rotherhithe

APRIL 18.

Thomas Bartlett, Devonport
Cuthbert Collingwood Embleton, Durham
Henry Tracey, Stonehouse

APRIL 25.

Henry Amos Ash, Bristol
Thomas Weston, Lambeth
Thomas Christopher Wood.

METEOROLOGICAL REGISTER,

By Messrs. HARRIS and Co., Mathematical Instrument Makers, 50, High Holborn.

	Rain gauge.	Moon.	Thermometer.			Barometer.		De Luc's Hygrometer		Winds.		Atmospheric Variation.		
Mar.			9 a.m.	max.	min.	9 a.m.	10 p.m.	9 a.m.	10 p.m.	9 a.m.	10 p.m.	9 a.m.	2 p.m.	10 p.m.
20			36	43	34	29.93	29.83	77	77	N	NE	fine	fine	fine
21		●	39	42	35	.71	.69	75	74	N	NNE	showery		
22	.06		38	42	29	.71	.73	73	76	NE	E	fine		snow
23			34	39	31	.72	.75	75	74	NE	E	foggy		snow
24			34	42	35	.66	.64	76	78	NE	NE	cloudy	cloudy	cloudy
25			38	43	34	.63	.59	75	76	ENE	N	fine	fine	
26	.24		37	42	35	.65	.78	77	77	WSW	SSW	cloudy		fine
27			39	43	36	.87	.84	77	78	SE	SE	fine		
28		☽	40	49	39	.81	.81	78	76	SSE	WSW			
29			45	50	40	.74	.56	75	75	WSW	SW	fog		cloudy
30			46	52	39	.51	.57	73	70	NW	NW	fine		fine
31	.21		46	49	43	.34	.06	78	80		SE			cloudy
Apr. 1			48	53	48	28.91	28.82	83	83	SE	WSE	cloudy		cloudy
2	.24		47	54	48	.85	.98	81	82	SW	SW	fog	showery	cloudy
3			51	56	46	29.30	29.45	82	78	NW	WSW		fine	fine
4		○	50	57	43	.33	.29	80	76	SSW	SSW	showery	cloudy	rain
5			48	55	45	.64	.71	74	71	NW	WSW	fine	fine	fine
6			50	55	43	.76	.73	70	67	W	WSW			
7			47	54	41	.73	.73	78	70	N	NE			
8			49	55	43	.74	.84	71	70	NE	E			
9			51	56	48	.87	.78	70	72	SW	NW			cloudy
10	.38		53	67	43	.65	.42	73	69	W	WSW		cloudy	rain
11			48	55	40	.19	.12	71	71	WNW	W	cloudy	cloudy	fine
12	.15	☾	46	50	42	.14	.36	71	70	NW	N	rain	cloudy	
13			47	51	39	.54	.40	69	68	N	W	cloudy	fine	rain
14			44	51	36	.20	.39	70	75	NNW	N		rain	cloudy
15	.32		42	45	35	.31	.10	76	72	W	N		rain	rain
16			45	49	36	.21	.34	72	72	E	ENE		showery	fine
17	.03		44	48	40	.36	.38	72	73	N	NW	fine	fine	cloudy
18			45	48	39	.46	.56	73	72	NW	N		showery	fine
19			47	52	43	.77	.83	71	72	WNW	WSW		cloudy	

The quantity of Rain fallen in March, was 1 inch and 1.100th.

THE LONDON

Medical and Physical Journal.

412, VOL. LXIX.] JUNE 1833. [84, *New Series.*

"For many fortunate discoveries in medicine, and for the detection of numerous errors, the world is indebted to the rapid circulation of Monthly Journals; and there never existed any work to which the Faculty in Europe and America, were under deeper obligations than to the 'Medical and Physical Journal of London,' now forming a long but an invaluable series."—RUSH.

ORIGINAL PAPERS.

CONGENITAL CATARACT.

Clinical Lecture on Congenital Cataract, delivered at the Birmingham Eye Infirmary, October 30, 1832, by Mr. MIDDLEMORE.

GENTLEMEN: You are aware that infants are occasionally born with cataract in one or both eyes; they have what is termed congenital cataract; and I may mention it to you, that this disease sometimes occurs in several children of the same family: we have, for instance, seen at this institution four children, brothers or sisters, (I forget which,) all of whom were born with cataract in each eye, and you will find some information relating to this singular occurrence in the work of the late Mr. Saunders, p. 158, and in the excellent Lectures of Dupuytren. You will remember therefore that congenital cataract is, in some instances, a peculiarity connected with the development of a particular part of the eye, which may occasionally be noticed in various members of the same family. I cannot, however, find that the brothers or sisters of the young man whose case I shall presently relate, have suffered from any similar disease.

CASE. Thomas Gardner, twenty-two years old, has congenital cataract in each eye. His mother informed me that she took him to Dr. Power, of Lichfield, when he was very young, and that the doctor recommended that no operation should be performed until he was older, and, not wishing to *tamper* with the eyes, she had allowed the disease to remain.

Now, before I performed an operation upon him, he could just see to walk about; could sometimes, by placing a book almost in contact with his eyes, and looking at it laterally, make out letters; could distinguish suddenly contrasted degrees of light, the more vivid colours, and so on; but he possessed no degree of vision which enabled him to read at all freely, or follow any ordinary employment.

Appearance of the cataract. A densely opaque membrane, rather smaller than the pupil, (which was naturally under the influence of an ordinary degree of light,) was situated immediately behind the posterior chamber; it was dotted, or marbled, and was evidently the capsule of the lens.

Other circumstances connected with the state of the eye. The eyeball is very small; its muscles have acquired an irritable unsteady action, and the globe is continually rolling about in the orbit. The cornea is exceedingly diminutive, and rather more convex than usual; the iris is healthy in appearance, but much more distant from the neural surface of the cornea than ordinary, and its mobility is less active, and more limited, than it ought to be. There is no inflammation of the eye present.

Operation. In this case I was desirous of operating upon one eye first, and of witnessing its effects, in order that I might be able to determine the probable advantage he might derive from the removal of the opaque capsule; for, as I shall presently more particularly explain, the retina is often, in these cases, permanently unfitted for the purposes of vision, and is not improved, is not altered in the slightest degree, when the original obstacle to perfect vision is taken away.

As an experiment, which could do no material injury, I introduced a small cataract-needle behind the margin of the cornea, as for the posterior operation of solution, removed the capsule from the pupil by depressing the point of the needle, so as to leave that part perfectly clear, and endeavoured to detach the opaque membrane from the iris, to which it had formed some adhesions. However, on withdrawing the instrument from his eye, the capsule quickly returned to its original situation. As this operation proved quite unsuccessful, I practised a different one about nine days afterwards: it consisted in making a small puncture in the cornea, introducing a pair of fine forceps within the incision, and beneath the corneal flap, and removing, or rather endeavouring to remove, the tough capsule; but I found that the adhesion of this membrane to the iris was of so firm a nature, that, rather than separate or destroy it, I could detach the iris from its ciliary connexion; I was content therefore to pull it through the pupil, and leave it in the anterior chamber. Soon after the operation had been performed, the opaque capsule retired into the posterior chamber. As soon as the very slight inflammation produced by this operation had subsided, I made an incision in the cornea with Beer's knife, and divided it pretty much as for the ordinary operation of extraction, (except, of course, that the division of the cornea was rather less extensive;) I then introduced a small hook behind the margin of the capsule, and withdrew it without the slightest difficulty. The eye was, in the course of a few days, in the state in which it is at the present time.

Last Wednesday I performed a similar operation upon the right eye only, dividing the cornea at its upper instead of at its lower part, and had no difficulty in removing the opaque capsule; and you have now an opportunity of seeing the benefits this operation has conferred. You may perceive that the pupil is quite clear and circular, that the iris is uninjured, and that no part of the opaque capsule remains.

Such, gentlemen, are the particulars of this case; and I will now proceed to offer a few general remarks on congenital cataract, and will conclude my observations by pointing out various circumstances connected with this case which have appeared to me to render it one of great practical interest.

You are aware that it is not now the custom to allow congenital cataract to remain, as happened in this case, without any attempts being made to effect its cure: it is established and correct practice to operate upon infants at the early age of from six to eighteen months;* and to Mr. Saunders is due, I believe, the credit of first distinctly recommending and bringing this practice into general notice; but I may mention that the friends of the late Mr. Gibson, of Manchester, claim for him the honour connected with this improvement in an important department of ophthalmic surgery.† Unquestionably it is a great improvement in the management of these cases not to wait, as was formerly the custom, until the subject of the disease had arrived at adult age, but to operate whilst the patient is very young; and I may tell you that, without mentioning the loss of time the continuance of the disease until adult age involves, that many serious evils occur in the structure and functions of the eye, and its appendages, which are distinctly referrible to the absence, on the part of the retina, of its due impressibility by light; and I am glad that the case before us gives me an opportunity of shewing you the more important of them.

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* Mr. Lawrence recommends this operation to be performed earlier; at a period after birth varying from one to two months. (See his Surgical Lectures.) Dr. Farre says, that the greatest success attended Mr. Saunders' operations for congenital cataract, when performed on children between eighteen months and four years old.

† In the year 1801, Mr. Ware published an account of a case in which he succeeded in curing congenital cataract by the operation of solution, in a boy seven years old, and he then pointed out the propriety of extracting the capsule by an incision in the cornea, if it should be very thick and tough; in 1805, he repeats this suggestion, and again recommends the posterior operation of solution as the best means of curing congenital cataract; and in 1811 he states, that he has been in the habit of operating upon infants who had congenital cataract, by slightly lacerating the anterior capsule. (369.) Mr. Cheselden operated upon "young children," when born with cataracts, as appears from his statement contained in his small work on Anatomy, published in 1792, page 304.

In the first place, you will notice that the eye is remarkably small, that it is imperfectly developed. You are aware that if an organ be insufficiently exercised in a proper manner, and at a proper period, it is not duly and fully developed. This is in accordance with an established law of the animal economy, and you will find the investigation of this subject replete with interest; but it is sufficient for my present purpose to draw your attention to the fact in this very cursory manner, in order that I may point out to you how admirably it is illustrated as respects the development of the eye, when its functions are never properly called into exercise, in the case before us. You may perceive (and it is a point well worthy your attention), that although no part of the eye is wanting except the lens and its capsule—that, with these exceptions, it is perfect as respects the *number* of its parts; and that, although its various parts are all of them actually existent and evolved, yet the organ is exceedingly small; the actual size of the eye is in fact so much less than usual, that its diminutiveness is palpable to common observation.*

The next circumstance to which I shall direct your observation, is the unsteady, rolling motion of the eyeball. You remark that, when a person is desirous of looking attentively at an object, his eye becomes steady and fixed; such a state of the eye is essential to the accurate perception of minute objects, to what may be termed minute vision. But if you examine the eyes of an adult in whom congenital cataract exists, you observe that they are continually darted in various directions; the muscles of the globe have lost their steadiness of action, and have become in a great measure independent of the will. This rolling, unsteady, and vacillating motion of the eyeball is clearly seen in the present case. It appears that the retina does not receive a distinct impress from any one object; no impress sufficiently decided to engage the powers of vision in the definite and determined contemplation of its characters.

Another circumstance will, I am sure, have occurred to your minds, as relates to the absence of the natural stimulus of the retina during a long term of years; it will become torpid, and its susceptibility will be diminished. You may now observe this fact, and you will find, on making inquiry, from the subject of these clinical remarks, that, although the membranous cataract is removed, the pupil rendered clear, and, in short, although every mechanical impediment to the free transmission of light is taken away, he cannot see so well as those persons generally do who are cured by the usual operation of those forms of cataract which occur in advanced life. Your physiological knowledge will have caused you to anticipate such a result; but I need not enter upon the consideration of those circumstances which determine the degree of perfection with which the different organs perform their various functions.

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* I have lately had an opportunity of seeing two young persons who were born with cataract in each eye, and in whom the hands and feet were exceedingly small. This imperfection of development was so obvious, that a professional friend, who saw these persons with me, remarked that they appeared like the hands and feet of an infant attached to the limbs of an adult. I have several times observed various errors in the formation and development of different parts of the system in persons suffering from congenital cataract.

Such, then, are some of the necessary consequences of the long continuance of congenital cataract, namely, 1, imperfect development of the eye; 2, a constant, unsteady, rolling or vacillating motion of the globe; and 3, impaired susceptibility of the retina: and you will remember that the two first of these injurious effects are never afterwards materially relieved, and that the latter is very generally a permanent defect; that is, although the sensibility of the retina may be much increased after the obstacle to the free transmission of light is taken away, yet its sensibility is even then much less than that of a perfectly healthy eye. To the same effect is the testimony of Dr. Farre, in allusion to the practice of the late Mr. Saunders: he says, the sensibility of the retina, "in many of the cases cured at the ages of four years and under, could not be surpassed in children who had enjoyed vision from birth; but at eight years, or even earlier, the sense was evidently less active; at twelve, it was still more dull; and, from the age of fifteen and upwards, it was generally very imperfect, and sometimes the mere perception of light remained."

If congenital cataract be allowed to remain without any efforts being employed for its cure, the opaque capsule (the usual remnant of congenital cataract), is apt to acquire adhesions to surrounding parts, and particularly to the iris; and this circumstance very much diminishes the chances of restoring unimpaired vision, besides adding greatly to the difficulties associated with the performance of an operation for its cure.

Of course, there are other evils connected with the long continuance of congenital cataract, as its necessary effects, but they are of a minor character, and I am unwilling to occupy your time in pointing them out in detail.

You may imagine that congenital cataracts vary in their colour and consistence, and also as to the part which is the seat of the opacity. I shall explain to you what *generally* occurs, and shall then mention to you the real state of disease in the case of the young man whose eyes you have just examined. The lens is generally of a whitish colour, and often presents a milky appearance; it is very soft, almost fluid, and the capsule is transparent. This is, in nine cases out of ten, the exact nature of the *original* disease, as it exists during the first years of life; but, in the course of a few years, the lens becomes absorbed, the capsule becomes opaque, and its two layers, not being separated by the intervention of the lens, unite and form one tough membrane, such as you may observe in the preparation I now pass round. This preparation-glass contains the two tough, opaque, circular membranes, which I removed, as you know, from the eyes of Thomas Gardner, and which are, in fact, the united hemispheres of the capsule of the lens. You will understand that, in accomplishing this union of the two layers of the capsule, that it is the anterior capsule which retires upon the posterior as the lens becomes absorbed; for the latter, (the posterior capsule,) in consequence of its firm connexion with the hyaloid membrane, does not change its situation.

It is a question whether or not the opaque capsule possess the power of absorbing the lens, and I am disposed to believe that it does not possess any such capacity.* You must carefully notice those cases in which there exists an opacity of the capsule, the lens remaining, and observe whether or not it becomes absorbed after the capsule is thoroughly opaque; but I may remind you, in conducting this inquiry, to determine previously, as correctly as you can, the state of the posterior capsule, and to decide how far absorption may go on through the texture—not by the agency of the lenticular surface of the capsule. Attention to these two circumstances is absolutely essential, to enable you to arrive at any approach to a correct conclusion upon the subject. I have never seen an opacity of the capsule of the lens as a congenital disease, the lens itself remaining transparent; nor have I observed the existence of a hard congenital cataract in very early life.

Now, respecting the mode in which this form of congenital cataract becomes eventually membranous, I am desirous that you should thoroughly understand the nature of the process by means of which this conversion of disease is effected. Let me then repeat, that the lens is first opaque; that, as soon as the opaque lens becomes absorbed, the capsule which absorbed it becomes opaque; that the two layers of the capsule eventually coalesce, and very frequently acquire adhesions to the iris. Hence you perceive the reason why this thick, tough, opaque membrane is not readily removed by the same process which causes the absorption of the lens. Mr. Saunders alludes to this point in very decided terms, and he says that, if this tough capsule be allowed to remain, it can neither be *depressed* nor *extracted* (156;) and he recommends that an attempt should be made to form an opening with a needle in the centre of the tough capsule. Now you will find, on a careful examination of this subject, that Mr. Saunders had some grounds for the expression of this opinion; but they were delusive, and the reasoning founded on them was quite erroneous. If the thick capsule be allowed to remain for a long period before an attempt be made to remove it, it acquires (I am speaking of the general rule), adhesions to the iris, and is very often strongly connected with the hyaloid membrane; and the former of these circumstances much increases the difficulty of extracting, and the latter of depressing it; and you know that, in relating the case which forms the basis of my remarks this evening, I told you that when I had removed the capsule from the pupil by my first operation, it afterwards recovered its original situation; and this, you will perceive, took place in consequence of the firm adhesion subsisting between the capsule and the hyaloid membrane; and you will further remember that, in consequence of the small size of the incision of the cornea, I could not, at my second operation, move with sufficient freedom the instruments necessary to destroy the adhesion subsisting between the iris and the capsule, and that, if I had persisted in my attempts to withdraw that membrane through the opening in the cornea, I must necessarily have torn the iris from its ciliary attachment. If I succeeded in removing the tough capsule most readily at my third operation* on the left eye, and also at my first operation upon the right eye, it was chiefly because I had made the incision of the cornea sufficiently large to enable me to move the hook and forceps very freely, when introduced beneath the corneal flap. And here, in justice to the memory of the late Mr. Gibson, of Manchester, who was a most talented and enthusiastic cultivator of our interesting profession, I should tell you that we are indebted to him for proposing,—or, I should rather say, for urgently and distinctly recommending, the removal of tough capsular cataract by a section of the cornea.

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* The absorbing power of serous membranes generally is always impaired, and sometimes totally destroyed, when rendered densely opaque by disease.

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* The previous operations had destroyed some, and loosened other, adhesions of the capsule to the iris, so as to assist in enabling me to remove it the more easily at my third operation.

Mr. Gibson pointed out that very little inflammation was excited by the simple section of the cornea, and by certain manipulations necessary to effect the removal of the opaque capsule in cases similar to that to which I am now directing your attention; but you will be aware that, unless you can remove the capsule pretty quickly, and without the frequent introduction of instruments, your manœuvres will be likely to give rise to great inflammation of the iris, or of the textures of the eye generally; and you will also be aware of the difficulty of using instruments in so small a space as that which is left by the edges of the incision you have made in the cornea; and I presume that a practical acquaintance with these difficulties suggested to Mr. Gibson the necessity of contriving those beautiful instruments, Gibson's hook, forceps, and scissors, the invention of which was original as respects Mr. Gibson.

You will remember that Mr. Gibson made merely a small puncture of the cornea, but I have been foiled on several occasions in consequence of adhering to his advice in this respect; and knowing that the cornea may be pretty freely divided in persons who are neither very young nor very old, without hazarding the occurrence either of sloughing, or any material degree of inflammation, I have thought it better to make (and in fact I have done so in my more recent operations), an incision of the cornea pretty much the same as for an ordinary operation of extraction; perhaps about one-fourth less as regards the whole extent of the section. Through an opening of this kind and extent, you can operate upon the opaque capsule with ease and freedom; and I am inclined to regard this alteration as a decided improvement upon the method proposed by Mr. Gibson. It must be admitted, as an objection to the more extended incision, that a puncture of the cornea is more readily made than the section of that membrane, as I have advised; but this objection will only exist in reference to your earlier operations, for a little practice will render either of these operations easy of performance. And here I may remark, that, to assist you in fixing the eye before making the puncture of the cornea, the index and middle fingers of the left hand, (if you are operating upon the left eye,) must project beyond the tarsal margin of the lower lid, the middle finger should be pressed firmly against the eyeball towards its nasal side, and the index-finger must be pressed in the same manner against the globe at its temporal side, so as to steady the eye; and you may employ more force in doing so than in an ordinary operation for extraction; for I can tell you, that the rolling, jerking, unsteady movements the eye has acquired, will render it a matter of great difficulty to divide the cornea, unless you adopt this or some other mode of controlling them.

If you have an opportunity of seeing a case of congenital cataract in an infant, you would, of course, recommend an operation for its cure without delay, if it be in good health, and more than six months old; and, under such circumstances, you would not think of dividing the cornea, and endeavouring to extract the cataract, but you would prefer the posterior operation of solution, as advised by Ware, Gibson, and Saunders; and, on the contrary, if your advice is requested respecting a case of congenital cataract, such as existed in the young man you have seen this evening, you would extract it in the way I have recommended, which is, you know, a modification of the method first suggested by Mr. Ware, but more particularly and precisely recommended, described, adapted, and practised by the late Mr. Gibson; and, if any firm and extensive adhesions exist between the tough capsule and the iris, you would introduce Gibson or Maunoir's scissors beneath the corneal flap, and make an aperture in the opaque capsule, and cut it away as nearly as possible on a level with the pupillary margin of the iris; the loose fragments of the capsule may then be withdrawn, either by means of the small hook or the forceps.

If the cataract, which was originally lenticular, become membranous, and the two layers of the capsule occupy the situation of the pupil, and become united, you ought not to attempt its cure by the operation of solution, because the toughness and compactness of its texture renders it exceedingly difficult of solution, and very little under the influence of the absorbents; neither ought you to attempt to depress it; for the firmness of its adhesion to the hyaloïd membrane renders that operation very difficult of performance: indeed, it is frequently attempted in vain. For this state of things the operation of extraction is decidedly preferable; but if the cataract occur in infancy, the operation of extraction would be unnecessary and unadvisable; unnecessary, because the case may be readily cured by means of a less difficult and important operation; and unadvisable, because, at the period of infancy, the iris is very near to the cornea, and the cornea is thicker, its texture is looser, and its lamellæ are more moveable upon each other, than in advanced life; so that it is extremely difficult to divide the cornea under such circumstances, without either wounding and injuring the iris, or leaving behind extensive opacity of the cornea. You are, I apprehend, familiar with the anatomical characters of the cornea in infancy, as compared with its qualities in the middle and subsequent periods of life, so minutely described by Zinn, Clemens, and Soëmmering.

Now I have not entered into a minute description of the mode in which I performed the operation in the case of Thomas Gardner, for, as many of you witnessed the operation, I have not thought it necessary to do so; and, besides, I have been chiefly anxious to direct your attention to the circumstances which would determine the propriety of selecting some particular operation for the cure of congenital cataract, according as it may exist in early or in more advanced life. I have also purposely omitted to speak of the adaptation of glasses to that condition of the eye which remains after the operation, and of the patient's notions of the distances, colours, dimensions, and forms of objects, on acquiring the increased vision which an operation, performed for the cure of the congenital cataract at a certain age, is so well calculated to confer.*

In concluding these remarks, I wish to state that I shall not fail to continue the occasional delivery of clinical lectures, whenever those circumstances exist which, as I have already explained, have induced me to appear before you on the present occasion; at least, so long as you evince a desire to attend them.

TRANSACTIONS OF THE MEDICO-BOTANICAL SOCIETY OF LONDON.

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FEBRIFUGE BARK OF EL MALAMBO.

Some Account of the Febrifuge Bark of a Tree called El Malambo, the Produce of South America. By WM. HAMILTON, M.D. (Communicated in a Letter to Earl STANHOPE, President of the Med.-Botanical Society.)

IN the latter part of the year 1825, I received from my correspondent, Mr. WATTS, his Britannic Majesty's consul at Carthagéna, in Columbia, some samples of a febrifuge bark, called el Malambo, the produce of a tree with which I am wholly unacquainted. The samples consisted of pieces of the bark in substance, and an ounce of it in powder. As it reached me by way of Liverpool, and the carriage of the bark in substance would have been attended with considerable difficulty and expense, I requested a friend there to place this last at the disposal of some medical gentleman likely to do justice to its investigation, while the powder was transmitted to me by post. The bark in substance was accordingly given to Dr. TRAIL; of the result of whose trials I have never since been favoured with any report; and the powder I transmitted to Dr. BOSTOCK, whose clinical researches pointed him out as a person likely to promote the objects I had in view. After some delay, I was favoured by him with the following letter, dated London, 11th December, 1825.

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* See the observations relating to this interesting subject, by Cheselden, Ware, Wardrop, Maunoir, Dupuytren, &c.

"Sir: I regret that so long a time should have elapsed since the receipt of your letter. When it arrived I was far from home, and have since that time been very particularly engaged. The account which is given of the bark is certainly very much in its favour, and its sensible properties are such as to render it probable that it may be a useful article of the materia medica. The only plan, however, to establish a point of this nature would be to send a quantity of the substance to some hospital, or dispensary, where a number of trials might be made of it by any person in that kind of extensive practice. Its taste and odour would make me suppose that it may be found useful in affections of the stomach and bowels, as is the case with colombo or angustura; and, even if its properties were found to be very similar, still it might be important to have a variety of articles. As I have no connexion with any medical charity, it will not be in my power to give you any assistance, and I think it will be best for you to apply to some practitioner in your neighbourhood.

"I am, sir, your most obedient,

"J. BOSTOCK."

Mr. Watts, in his letter, dated Carthagena, 19th July, 1825, says,

"I wish particularly to draw your attention to a valuable production of this province: it is the bark of the Malambo tree. I enclose you a little of the powdered bark; and Mr. Byrne has charge of a parcel containing some pieces of the bark. You have also enclosed a description of this bark, and its qualities, given me by Don Jorge Lopez, the apothecary, my neighbour, with a translation. I shall be glad to hear what opinion may be formed in England of this bark, and whether it is likely to become an article of exportation from this port; for it can be procured in any quantities. I enclose also another description of the Malambo tree, extracted from another rare and valuable Spanish work in my possession, with a translation.

The following are the accounts referred to:

" *Descripcion del Malambo, por Don Jorge Lopez.*

" Sedia, en la provincia de Cartagena, un arbol de la misma altura de los Quinos, nombrado Malambo, cuja corteza en mi concepto tiene qualidades mas recomandables que la Quina: ella abunda de un aromatico tan constante y penetrante que jamas lo pierde, y por supuesto abunda tambier de partes gomosas muy utiles, à mi ver, à la naturaleza; es indigena de esta provincia, y se epcuentra con abundancia. Su corteza as quehabla, y crea que si se dedicase los facultativos à hacer usa de ella, la Quina perderia su concepto. En este pais la aplican à diversos males con ventaja conocida, en particular para los pasmos, heridas, inflamaciones, males del estomago; a mi ver producivia un efecto admirable en la hidropesia, y fiebres malignas; por varias observaciones que se ban hecho es effeax para las asmas, reumatisma, disenteria, supresiones de menstruas; en fin, en el pais, y en particular en los campas, es un remedia general aplicado con felix suceso en todas las enfermedadas referidas."*

" *Descripcion del Malambo, (extracted from a rare Spanish work.)*

" El tercero es el Malambo, cuja corteza aromatico es un antispasmodico eminente, de un amargo muy activo, febrifugo, y astringente. Lo hay con abundancia en la provincia de Santa Marta, donde lo aplican para curar pasmo, calenturas, intermittentes, y la dysenteria; y tambien se encuentra en varios territorios de esta provincia. Se hacen algunas extracciones de su corteza par la Habana, y alli lo usan con mucha suceso contra el pasmo, à que son muy propensas los negros; y *desde que tien este specifico casi no muera ninguno deel.* Aqui no se aplica para nada, y hace pocos dias hemos visto morir un joven apreciable, par no haberle dado en tiempo esto remedio. Es un vegetal importantissimo, que merece la atencion del gobierno por las virtudes que dexamos expuestas, y aplicaciones que se hacen de el en Santa Marta; como

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* *Translation of the Description of the Malambo, given by Don George Lopez.*

There is found in the province of Carthagena a tree of the same height as the Quinas, (bark-trees,) named the Malambo, the bark of which, in my opinion, possesses more valuable qualities than even the Quina. It abounds with an aromatic so strong and so penetrating, that it never loses it under any circumstances; and, of course, it likewise abounds in gums highly useful, in my idea, to humanity. It is indigenous to this province, and is found in great abundance. It is to the bark of the tree which I allude, and I really believe that, were the faculty to make use of it, the Quina (Peruvian bark) would fall in their estimation. In this country it is applied to several diseases with well-known success; in particular, in cases of spasms, wounds, inflammations, diseases of the stomach. In my opinion, it would produce the happiest results in cases of dropsy and malignant fever. From several other observations, it is also found highly efficacious in asthmas, rheumatisms, dysentery, and suppression of the menses. In short, in the province, and particularly in the country parts, it is a remedy applied with the happiest success in all the cases enumerated above.

y por color y olor de su corteza, tenemos razones para creer sea del genero Cusparia, ò Quina de la Angostura, de que se compane parte del receta del difunta Dr. Mutis, para curacion de la dysenteria, y na duda mos aseguar que, a falta de esta, puede stiplir la corteza del Malambo."*

Such is the account given by the late canon Don Jose Ignacio del Pombo, the friend and pupil of the lamented and learned Mutis, in his rare and almost unknown work on the Natural Productions of the Province of Carthagena.

Having requested a further supply of Malambo bark for experiment, I at length received a second supply of some pounds, in the summer of 1827, at a time when indisposition had confined me for some months to the house. I in consequence applied to my friend Dr. COOKWORTHY, whose practice at the dispensary pointed him out as a person likely to promote my views, especially as he had facilities for getting it reduced to powder, which were not within my reach; and I placed the whole quantity, with the exception of one piece, (fragments of which accompany this paper,) at his disposal. The bark was in pieces of from a foot to eighteen inches in length, about two inches in breadth, and three eighths of an inch in thickness; the outer and thinner coat was externally of an ash colour, marked with irregular longitudinal furrows, and separating from the inner or thicker coat, which had more of a ligneous texture, or any attempt at breaking the bark, by bending the fragment marked *a*, exhibits both the inner and outer coats of the bark united; on fracture, the smell was agreeably aromatic, and the taste not unpleasantly bitter. I failed in my expectations of obtaining a satisfactory report of its effects from Dr. Cookworthy, and could only learn from him, in conversation, that it was as effectual in arresting the progress of intermittents as the cinchona; but the bulk of the dose rendered its exhibition objectionable, especially since the introduction of quinine, a few grains of which produced all the effects of as many ounces of either the Peruvian or Malambo bark. I urged him in vain to get his brother to analyse a portion, and determine the nature and quantity of its active constituents; and I found that, by trusting to others, I had again lost the opportunity which this second supply afforded me of investigating its useful qualities. I had, however, retained one piece of the bark, which I treasured up, in the hope of some future opportunity offering for getting it analysed; and this piece I shall gladly place at the disposal of the Society.

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* *Description of the Malambo, (extracted from a rare Spanish Work.)*

The third is the Malambo, the aromatic bark of which is a powerful antispasmodic, a very active bitter, febrifuge, and astringent. It abounds in the province of Santa Martha, where it is applied to the cure of spasm, intermittent fever, and dysentery; it is likewise found in several districts of this province. It is sent (the bark) in some quantity to the Havana, and there it is used with much success in cases of spasms, to which the negroes are very subject; and since they are in possession of this specific scarcely any die of it. Here no use whatever is made of it, and not many days ago we have seen a very amiable young man carried off, from not having taken this remedy in time. It is a most important vegetable, and deserving the attention of government, for the virtues we have enumerated, and the use made of it in Santa Martha. From the colour and odour of its bark, we have reason to believe it is of the genus Cusparia, or Quina of Angustura, of which is in part composed Dr. Mutis' receipt for the cure of dysentery; and we have no doubt that the want of this might be supplied by the Malambo.

I was equally unsuccessful in my applications to Mr. Watts for specimens of the plant which produced it; and hence I am unable to throw the smallest light upon the genus to which it belongs, or advance anything beyond the merest conjecture. That it does not belong to any of the true cinchonas, which differ from the Exostemas in having their stamina included, seems probable from Humboldt's observation, (*Pers. Narr.* vol. iii. p. 29, *note.*) that almost all the cinchonas of the inferior regions are Exostemas, not true cinchonas, the properties of which differ considerably from those of the genuine cinchonas of the Andes; while from his observation of the fact of his not having found a single specimen of Exostema during his long abode on the coast of Cumana and Caraccas, the banks of the Apuri, the Oronoko, and Rio Negro, in an extent of country of four thousand square leagues, it seems equally improbable that it belongs to the genus Exostema. It is probable therefore that it belongs either to the febrifuge bark-tree described by Dr. Hancock, the Cusparia of the banks of the Oronoko, the Machaonia, the Cuspa of Humboldt, a nondescript plant, the inflorescence of which Humboldt has never been able to procure, notwithstanding its blossoming at the end of November, and being abundant in the province of Cumana; or perhaps a new and distinct genus.

Humboldt describes his Cuspa, which, he says, must by no means be confounded with the Cuspare (Cusparia febrifuga) of Angostura, as a tree of not more than fifteen or twenty feet in height, with alternate, oval, entire leaves destitute of stipules, and differing in this respect from all the trees of the family of Rubiaceæ, to which the Cinchonas and Exostemas belong, and yielding a very thin pale-yellow bark, possessing more bitterness, but at the same time less disagreeable, and agreeing better with the stomach than that of the true cinchona, and possessing great febrifuge powers. This description by no means corresponds with the Malambo bark, which is rather thick, of a cinereous colour, agreeable to the smell, and of a bitterness not only less, but totally different in taste than the bark of any of the cinchonas. It also appears, from the account of Don Ignacio de Pombo, to be a powerful and valuable antispasmodic; and the fact of its having, from the first period of its introduction into Cuba, completely checked the mortality previously so frequent among the blacks, from the attacks of a spasmodic disorder to which they were subject, "*desde que tien este specifico casi na muere ninguna de el,*" is an important recommendation, which merits further investigation.

Possibly it might even be found of service in arresting the progress of hydrophobia, some of whose most distressing symptoms are evidently of a spasmodic character. Spasm, the term applied by the prior to the complaint so prevalent, and formerly so fatal, among the negroes of Cuba, is so vague a denomination as to leave us in a state of uncertainty as to the true character of the complaint; but tetanus, to which negroes are often subject, is probably the disorder to which he refers, and is one which bears considerable analogy to hydrophobia; and it is this circumstance which suggested to me the possibility of this bark being useful, if only as a palliative, in this latter and still more melancholy affliction.

I cannot sufficiently regret that my information does not enable me to furnish anything in the shape of positive information, beyond the statements furnished by the prior and the Carthagena apothecary, whose exaggerated description is only calculated to provoke a smile. Should circumstances ever permit of my visiting the regions which produce it, I hope to be able to lay before the Society more precise intelligence respecting it, accompanied by a botanical description and specimens.

Postscript. I have no distinct recollection of having ever communicated to your lordship a striking instance of the powerful effects of the seeds of the Hibiscus Abelmoschus, or Musk Ockra, in counteracting the fatal influence of the bite of venomous reptiles, related to me in one of his letters by Mr. Watts, our public-spirited consul at Carthagena, as having fallen within the immediate limits of his own observation; I shall therefore repeat the facts of Mr. Watts' communication here.

A peasant, resident on the heights of La Papa, near

Carthagena, being engaged with his dogs in pursuit of a hare, a dog, the best of his number, had the misfortune to be wounded by one of the most venomous snakes of that district. The dog instantly dropped, foamed at the mouth, and the wounded part began to swell. The peasant, regarding the case as desperate, at first resigned the dog to what he imagined to be his inevitable fate; but returning home, and recollecting that the animal had been a favourite, and the best of his pack, he determined to revisit the spot, and ascertain the degree of hope to be entertained. On reaching the spot, he found the animal stretched out, unable to move, and evidently in great agony: taking him up in his arms, he hurried home with him, and immediately rubbed the swoln and wounded part well with the bruised seeds of the musk plant, or Almisdenia, as the Hibiscus Abelmoschus is called there; forcing a considerable quantity at the same time down the animal's throat, with such success, that symptoms of amendment rapidly appeared, and the dog, at the date of Mr. Watts' letter, was perfectly recovered; although nothing is more certain than that his death would have been inevitable, had he been left to his fate. Yet here the application was made under circumstances by no means favourable, since much time had necessarily been lost, and the symptoms of constitutional affection from the action of the poison had actually begun to exhibit themselves.

The Musk Ockra is a common plant in most of our West-India islands, and its seed could be easily obtained from thence to almost any amount. It certainly merits further investigation, and will, I trust, attract the notice of some of the scientific members of the Society. A saturated tincture of the bruised seeds would, in all probability, be the most convenient form for internal exhibition.

THE EPIDEMIC CHOLERA.

On the Symptoms of Epidemic Cholera. By ALEXANDER TURNBULL CHRISTIE, M.D., of the Honourable East-India Company's Service; Member of the Royal Asiatic Society of Great Britain and Ireland, of the Wernerian and Royal Medical Societies of Edinburgh, &c.

THE epidemic cholera does not always present exactly the same symptoms, and almost every visitation has been observed to be characterized by a certain type: sometimes there is great vomiting and purging, at other times, one or even both of these symptoms have been entirely wanting; spasms have, in certain instances, been unusually severe; very frequently however, and especially among the natives, they have not occurred at all; great pain and burning at the epigastrium have been constantly observed by some practitioners, while others have found them to occur but seldom. It is evident, therefore, that a description of the disease, which had been drawn from a single visitation, would, in all probability, be quite inapplicable to many of its varieties, and that, in order to arrive at accuracy, we must study the numerous features it has assumed at different times and places. By analysing its phenomena from a multitude of examples, we shall be able to determine their simplest form, and (as it were) the essence of the disease, thus employing a similar method to that which we would adopt in any other question in physics.

The epidemic has sometimes been confounded with common cholera morbus; but it will be hereafter shewn that these are very distinct diseases, although they have been sometimes met with in the same visitations, and even combined together in the same case, thus giving rise to a mixed form of the disease. Different names have been applied to them, but the correct appellations would be catarrhal cholera for the former, and inflammatory cholera for the latter, (*cholera catarrhalis* and *cholera pyretica*:) the reason for which can only be understood after we have studied their symptoms and pathology.

I will first give a simple list of all the symptoms of the epidemic, and will afterwards make observations on each of them, describing their varieties and relative importance, and shall thus be enabled to present a detailed account of all the forms of the malady. I have attempted to place the symptoms, as nearly as possible, in the order in which they usually succeed each other; but many of them being often synchronous, and the disease being sudden in its attack, and rapid in its progress, a mere approximation is here all that can be expected; perfect accuracy, in such circumstances, being out of the question.

1. *Premonitory symptoms.* General uneasiness, lassitude, depression of spirit, and anxiety; simple looseness of the bowels. 2. Vomiting and purging of a sero-fibrinous fluid. 3. A subduing feeling of exhaustion and sinking; jactitation. 4. A sense of uneasiness, burning, and pain at the epigastrium and in the belly. 5. Spasms. 6. Pulse small and accelerated, and at length ceases in all the external parts. 7. Skin becomes gradually colder, and is sometimes covered with a profuse cold sweat, or clammy moisture. 8. The whole sur-

face of the body appears collapsed, the lips become blue; the nails present a similar tint; and the skin of the feet and of the hands becomes much corrugated, and exhibits a sodden appearance; the features of the face collapse; the eyes sink in their orbits, and are sometimes covered with a tenaceous film; the corneæ become flaccid, and the whole countenance assumes a cadaverous aspect strikingly characteristic of the disease. 9. Thirst. 10. Tongue moist, whitish and cold. 11. No urine or saliva. 12. Voice feeble, hollow and unnatural. 13. Occasionally deafness, and tinnitus aurium. 14. Respiration slow, sometimes oppressed, and breath cold. 15. If blood be drawn, it is dark-coloured, or nearly black, thick, ropy, and in many instances does not separate into serum and crassamentum.

It is worthy of remark, that the disease has been found generally to take place at night, or early in the morning, and death usually occurs within eighteen or twenty hours after the commencement of the attack, and often in a much shorter time.

It is seldom that all the symptoms mentioned in the preceding list have been present in one case; many of them are generally wanting; and cases have sometimes occurred which have proved fatal in a very short period, and in which the only symptoms were anxiety, a subduing sense of sinking, exhaustion, and death. Such, however, are rare, and few cases can be brought forward in which neither vomiting nor purging was present.

1. Although the attack is often very sudden, and without any premonitory symptoms, yet it has generally been observed to be preceded by some of the following: anxiety, with a general uneasiness and depression of spirits, nausea, griping and looseness of the bowels, a sense of debility, and coldness of the skin. No one has studied the premonitory symptoms of the disease so closely as Mr. ANNESLY, and I hope, therefore, that no excuse will be considered necessary for quoting his observations on this important subject, in his own words. He says, "A practitioner possessed of true professional tact will discover in the countenance of the patient the earliest changes which mark the approaching invasion of cholera. The features are expressive of something approaching a state of anxiety, although the patient himself may not be aware of his state, or even that he is at all ailing. If the medical attendant inquire how he feels at this time, he generally answers, "very well;" but, if pressed upon the subject, he acknowledges that he experiences feelings which he cannot

distinctly describe, though he feels neither pain nor sickness. His spirits are however low, and there is sometimes a clammy moisture on the skin, and the pulse, though occasionally full and strong, is evidently oppressed and labouring. It is not, however, that kind of pulse which will attract particular attention, unless we are upon the alert for this disease; but, being prepared for such a visitation, it is impossible to mistake it." However much we may be inclined to value the slightest knowledge of any symptoms which might enable us to detect the approach of this dreadful malady, it must at the same time be confessed that the preceding, copied from Mr. Annesly's work, are so obscure and indefinite, that they may easily elude the most vigilant observer. But they are often combined with others which cannot be mistaken; for "during this stage, Mr. Annesly adds, "the patient feels considerable nausea, and has his bowels more freely moved than usual; but the stools then generally consist of such matters as have been lodged in the large intestines, and consequently they present various appearances, according to the state of the digestive organs at the time of invasion. The patient, however, often complains of no actual pain, even on pressure made upon the abdomen, either in this or in the subsequent stage, but what is the result of spasm in the latter. He feels chiefly a great degree of exhaustion, and inability to make the least exertion. Colicky pains are frequently felt in the belly, but they often pass off, or are relieved by pressure, and the free evacuations which take place in this stage. The urine, in the period of invasion, is often in small quantity, and seldom voided. In this stage of the disease, and indeed through its whole progress, in many cases, the abdomen is more than usually tumid,* evidently from congestion of the viscera lodged in this cavity.

A very common mode in which the disease commences is by a simple looseness, or diarrhœa, unaccompanied by spasms or pain, which continues for some hours, or even for a day or two, before any of the more violent symptoms develop themselves.†

The attack is sometimes so very rapid that no premonitory symptoms can be observed, and cases have been recorded in which a patient has been seized instantaneously when going about his usual avocations, apparently in a perfect state of health. Mr. Scot supposes that the disease is always of sudden invasion. Mr. Orton says, "the attack of cholera is usually sudden and violent, but, in a great majority of instances, not without some premonitory symptoms;" while Mr. Annesly, on the other hand, asserts that "there are premonitory symptoms, and these of a pathognomonic kind," and that the appearance of a sudden invasion, in some cases, has arisen merely from the patient having not been seen till towards the second stage, when the disease had begun to be formed. I have had occasion, repeatedly, in my own practice, to observe the symptoms which I have mentioned as being indicative of an approach of the disease; but while I agree so far with Mr. Annesly, I conceive that there can be no doubt of the disease being, in many cases, very sudden in its attack; for my own experience not only affords proofs of this, but numerous others might be adduced in support of it, from the reports of the medical officers of all the three Residencies in India.

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* But, so far from this being a common symptom, we find it stated in the Report of the Madras Medical Board, that "the abdomen has sometimes been observed to be tumid, but more frequently drawn towards the spine."

† Numerous cases of this description are mentioned in the Madras Report, and many have fallen under my own observation.

2. It often happens that the disease commences at once with a sudden evacuation of all the contents of the bowels, by purging, followed by a repeated discharge, at very short intervals, of a peculiar watery fluid, which in many cases escapes involuntarily on any change of position. There is seldom much griping in this variety, although the calls are frequent and irresistible: the dejections, in general, flow without difficulty or any effort, but sometimes they are thrown out with great force, as if from a syringe. There is sometimes no purging, and the absence of this symptom is supposed by Mr. Scot to denote a peculiar malignancy of the attack.

Vomiting, although a common, is by no means an invariable, symptom of cholera. I have seen cases in which it was entirely absent, and it often occurs only at the commencement of the attack, but soon ceases; the stomach then receiving, and retaining, whatever is poured into it, as if it were a dead substance. The cases in which vomiting has been most urgent have always been found to be less malignant than those in which it was slight, or altogether wanting.

After the first evacuations of the stomach and bowels, of the usual contents, the discharges always consist entirely of a peculiar fluid, which has been very appropriately named the cholera secretion, and is very characteristic of the disease. Although it varies sometimes in its external characters, it has always (as we shall more particularly point out hereafter,) the same chemical composition, consisting of serum and fibrin. In general the fibrin floats in the transparent serum in the form of flakes, or is equally diffused through it, when the whole has a whitish colour, and resembles rice-water.[*] Sometimes the fibrin occurs in a larger proportion, is intimately mixed with the serum, and forms a variety of the fluid which has somewhat the appearance of chyle, milk, or pus.

In many cases, the cholera secretion, under one or more of the forms just described, is evacuated in prodigious quantity; and "were it uniform," says Mr. Scot, "it might afford us an easy solution of the debility, thirst, thickness of the blood, and other symptoms; but it is unquestionable that the most fatal and rapid cases are by no means those which are distinguished by excessive discharges. We have innumerable instances, on the contrary, of death ensuing after one or two watery stools, without the development of any other symptom affecting the natural functions. Even collapse has come on before any evacuation, by stool, had taken place." It is worthy of remark, however, that the absence of vomiting and purging, in such cases, is not owing to the total absence of the morbid secretion in the alimentary canal, but entirely to the inability of the stomach and intestines to throw it off. I will shew, when treating of the ratio symptomatum of the disease, that, in those cases in which there was no vomiting or purging, the stomach and intestines were found, after death, to be loaded with the cholera fluid; and had post-mortem examinations been always made in such cases, I am sure that no one would have expressed any surprise at their malignancy; for it is probable that the secretion would have been found even more abundant in them than in ordinary cases. I wish it to be understood, then, that a fluid consisting of serum and fibrin is secreted by the mucous membrane of the stomach and bowels, in all cases of cholera, and is either discharged by vomiting and stool, or retained in the alimentary canal, till the fatal termination of the disease.

The evacuations have been frequently observed to be turbid, and to have a grey, green, or yellow colour, but these appearances can be always traced to the admixture of calomel and other medicines, given for the cure of the disease, and are accordingly never observed at the commencement, but only after the attack has made some progress, or when it has begun to yield. Mr. Annesly has shewn, by experiment, that calomel produces a grey colour when mixed with the secretion, and that when bile is also added, a green colour is the result.

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[*] This has given rise to the vulgar term for the secretion in India, viz. "conjee evacuations;" conjee being the Hindoostanee word for rice-water; and so well aware is every one of the characteristic nature of this fluid, that, whenever the evacuations of a patient are observed to consist of it, no doubt any longer remains of the disease being cholera.

Blood is sometimes mixed with the evacuations; but this is of rare occurrence, and is probably to be attributed to the rupture of small blood-vessels, occasioned by the great commotion in the alimentary canal. The preceding description, therefore, may be considered as universally applicable to the cholera secretion, except in a few cases, in which its external characters are altered by extraneous circumstances. The evacuations are always without any admixture of bile, the reappearance of which is considered a certain symptom of returning health.

3. One of the most distressing symptoms of cholera is a subduing sense of exhaustion and sinking, which often comes on at the very commencement of the attack, immediately after the first evacuations. The patient is generally overwhelmed with great depression of spirits, is listless, impatient of disturbance, and averse to speak; but it is very remarkable that his mind still remains clear, and he retains the power of expressing his thoughts, almost to the last moment of his existence. Jactitation, which occasionally occurs, and has been observed more frequently in Europeans than in the natives of India, is always to be regarded as a most alarming symptom.

4. Burning and pain at the epigastrium have been very common symptoms in some visitations of cholera, and Mr. Annesly tells us that he never saw a case of the epidemic in which they did not exist. In the cases which have come under my own observation, however, they have, I think, been more frequently absent than present; and in the Report published by the Madras Medical Board, we are told that not only in individuals, but also in epidemic invasions, these symptoms have been altogether wanting. When present, they are often accompanied with pain at the umbilicus, and are generally connected with thirst. In many cases, I have observed that this burning sensation and thirst have not occurred till after the disease has continued for sometime; and I have been inclined, in such cases, to attribute them to the active stimulating medicines which had been poured into the patient's stomach. But this explanation will by no means apply to all cases; for these symptoms frequently make their appearance at the very commencement of the attack, and are then probably owing (as I shall more particularly explain hereafter) to spasms in the stomach and bowels, or to inflammation. The agonies which these symptoms occasion are sometimes most excruciating; but this is seldom the case in the most dangerous form of the disease.

5. Spasms were of such general occurrence in the first

visitations of cholera, in 1817 and 1818, as to confer on it the specific name "spasmodic;" but since then, in a great proportion of cases in India, they have been completely wanting. They are generally present in those cases in which there is active vomiting and purging, and appearance of irritation in the alimentary canal, and pain and burning at the præcordium; and they occur more frequently in the robust than in the weak and debilitated, and in European than in native patients.

All the voluntary muscles are liable to be affected by the spasms, but those of the legs and feet are most obnoxious to them. They often extend to the muscles of the abdomen and chest, but seldom attack those of the back, loins, or face. They are sometimes of a tonic, sometimes of a clonic character, and are generally attended with very great pain. Even when there are no spasms or actual pain, the patient is often very restless, tossing about, and appearing to suffer great agony.

Cases accompanied by violent spasms are by no means the most dangerous; and it has been very truly remarked by Mr. Scot that the worst variety of the disease "is that which is noted for the very slight commotion in the system, in which there is no vomiting, hardly any purging, perhaps one or two loose stools, no perceptible spasm, no pain of any kind; a mortal coldness, with arrest of the circulation, comes on from the beginning, and the patient dies without a struggle."

6, 7, 8. None of the symptoms of the epidemic cholera are so truly characteristic and invariable as those which depend upon the retreat of the blood from the surface of the body, including smallness or loss of pulse, collapse, and coldness of the skin. However much they may vary in degree, or in the time of their appearance, they are never wanting in the advanced stage of the disease; and it is only in such cases as are cut short by remedial measures being soon adopted, and consequently in which these symptoms have not time to develope themselves, that they do not occur at all.

The pulse is generally small and accelerated from the commencement; and as the disease advances it gradually diminishes in size, and at length ceases in all the external parts. Sometimes the diminution or loss of pulse is rapid, especially after sudden and copious evacuations of the cholera secretion, by vomiting and stool. On the other hand, it sometimes happens that it is full and strong at the commencement, and diminishes only after the disease has made some progress. Such cases are most frequent among strong plethoric Europeans; and indeed have been seldom observed in the natives of India, owing probably to their vegetable diet, and their abstinence from fermented liquors, rendering their frames less prone to irritation. It is very remarkable that the pulse is often imperceptible for hours before the death of the patient, while at the same time his mind continues clear, and his voluntary muscles obedient to his will: and "instances are not wanting," says Mr. Scot, "of patients being able to walk, and to perform many of their usual avocations, even after the circulation has been so much arrested that the pulse has not been discernible at the wrist: the cases here alluded to are those chiefly in which it has begun by an insidious watery purging; and many lives have been lost in consequence of the patients, under these fallacious appearances, not taking timely alarm, and applying for medical aid."

A species of cholera, known by the name of cholera morbus, differs completely in its symptoms from the usual cases of the epidemic; being characterized by a full strong pulse, severe spasms, pain at the præcordium and in the bowels, and bilious vomiting and purging. It is a much less dangerous disease than the epidemic, is common in other countries as well as in India, and is probably owing to inflammation of some part of the gastro-enteric mucous membrane. Although it shall be more particularly described hereafter, I have thought it necessary to notice it also at present; for it has been observed to prevail during some visitations of the epidemic; and cases have often occurred in which the symptoms of the two diseases have been combined; the attack having commenced with a full strong pulse, hot skin, and active vomiting and purging of bilious matter, and afterwards degenerated into the more dangerous form, accompanied by loss of pulse, collapse, and sero-fibrinous evacuations. It is of much importance that these symptoms should be carefully attended to, since they require alteration in our plan of treatment.

Nothing in this disease arrests the attention of the bystander so forcibly as the sudden change which takes place in the external appearance of the patient's body. The blood being withdrawn from the surface, occasions a collapse or contraction of all the soft parts; the skin of the extremities becomes shrivelled; the hands have a sodden appearance, as if they had been long soaked in water; the bones in different parts of the body project much more than usual; the features of the face shrink, and their expression is completely altered. Often have persons been horror-struck at seeing their friends, whom they had left probably not more than an hour or two, so altered that they could scarcely be recognized, with death marked in their face in the most fearful characters, the cheeks sunk, the lips shrunk and bloodless, the nostrils contracted, the cheek bones projecting, the eyes sunk in their orbits, with their surface glossy and dimmed, and the brow white and covered with a cold dew. The whole body is at the same time deadly cold, yet the patient complains of feeling hot, and is unwilling to be covered with the bedclothes. Cases have been recorded in which there was no diminution in the heat of the skin, and it has sometimes happened that an increase of temperature has taken place just before death. But it has then been confined to the head and trunk, and has been almost always found to be a fatal symptom, being unconnected with any improvement in the circulation, or in the functions of the lungs. In general, slight coldness of the surface occurs at the very commencement, and gradually increases as the disease advances. Sometimes it is not developed until the malady has made some progress, and cases have not been uncommon in which the attack has been ushered in with a hot skin, and increased action of the circulation. But when the disease has not proved very suddenly fatal, or has been quickly arrested by medicines, this symptom has almost always occurred in the advanced stage.

The state of the perspiration is more variable than that of the temperature of the body. In many cases it is profuse and watery; sometimes it is scanty, and of a clammy nature; it is often confined to the face or brow; and cases have occurred in which it has been entirely wanting. It is always cold, and I have sometimes observed it to have a peculiar cadaverous smell.

9, 10. Thirst is not a very common symptom at the commencement of the disease, except in those cases in which there is pain and burning at the præcordium, and other symptoms of inflammation. Its occurrence in the advanced stage of the common cases of the epidemic have been supposed to be owing (not without reason, I think,) to the large quantity of stimulating medicines which are usually administered. It is often present when the mouth at the same time is moist and cold.

11. The moisture of the mouth in this disease does not appear to proceed from saliva, (the secretion of which is arrested,) but to the peculiar fluid which is thrown out by the mucous membrâne of the mouth, in common with all the other mucous membranes of the body. No urine is secreted during the continuance of the disease, no bile, and in fact no fluid, except the cholera secretion. The urinary bladder is often found to contain a fluid secreted by its lining membrane, and similar to that expelled from the alimentary canal.

The reappearance of urine, or bile, is always considered as a decided indication of returning health.

12. In the advanced stage of the disease the voice becomes altered, hollow, feeble, and unnatural; but it is surprising how distinctly the patient is able, in many cases, to articulate until within a few minutes of his end, and long after his pulse has become imperceptible.

13. Deafness, and tinnitus aurium, are mentioned by some authors as of very frequent occurrence, but I scarcely ever observed them in my own practice. They are probably present only when there is much congestion in the vessels of the brain. Vertigo is not uncommon, and sometimes occurs at the very moment of seizure, in rapid cases of the disease. Coma has been mentioned as not an unusual symptom. It may have occasionally occurred towards the fatal termination, but it is certainly not common; for, although the patient is generally in a dozing state, with slow breathing, and is very unwilling to be disturbed, yet, when roused, his mental faculties are quite collected, and he answers distinctly any questions put to him.

14. The respiration is generally slow, sometimes oppressed and irregular, occasioning great distress to the patient. The breath is usually cold; and it would appear, from the experiments of Dr. Davy, that it contains less carbonic acid than in a state of health. In cases where there is no spasm, the mechanical part of respiration continues to be performed to the last, only becoming gradually slower.

15. The state of the blood in cholera has universally excited the utmost attention. In well-marked cases of the epidemic, it may be said to be invariably of a dark colour, in the arteries as well as veins; and, next to the peculiar secretion from the mucous membranes, this is probably one of the most constant symptoms of the disease. But it is not at the very commencement of an attack that this change in the colour of the blood is observed, and it does not arrive at its greatest intensity until the disease has made some progress. Besides having a dark, and in many instances an almost black colour, it also undergoes other important changes: sometimes it is thick, like tar, sometimes thin and watery; it always flows with difficulty, and seldom separates into serum and crassamentum, remaining in a perfectly fluid state, or acquiring the consistence of liquid honey, or of tar. Although these changes are less in some cases than in others, yet I believe the blood is invariably darker coloured than in health. This being also observed, however, to take place in various other diseases in India, such as certain cases of fever,

rheumatism, &c., it will not alone serve as a diagnostic symptom of cholera. Mr. Scot says, "The blood is generally found to be less changed in appearance in those cases of cholera which have been ushered in with symptoms of excitement, than where the collapsed state of the system has occurred at an early period." I have observed in my own practice, and it has also been often observed by others, that, upon venesection, the blood very often becomes lighter coloured, and more healthy in its appearance, as it continues to flow, accompanied at the same time with an evident amendment in the general state of the patient.

Such then are the symptoms of epidemic cholera, a disease which, if left to take its course, is generally fatal; nay, in many cases, if proper remedies be delayed even an hour or two, the patient's fate is sealed. More rapid in its progress than plague, often more cruel in the tortures it inflicts upon its victims, it has in many countries, when not arrested by the skill of the physician, cut off thousands and tens of thousands, in a fearfully short time. But it is consoling to know that medicine has the power, in a large proportion of cases, to subdue it; and perhaps never has the triumph of the medical art over disease been so conspicuous as in epidemic cholera; it may be said, with truth, that it has plucked thousands from the jaws of death, for death is the ordinary termination of this dreadful malady, when not counteracted by art.

It has been already mentioned that cases of cholera morbus have sometimes accompanied visitations of the epidemic, and that the two have been occasionally conjoined; thus producing modified forms of the disease, which will now require to be described.

Cholera morbus is a well-known disease in all countries: its symptoms are—pain and burning in the stomach and bowels; pulse strong and full; bilious vomiting and purging; spasms; hot and dry skin; great thirst; anxious, distressed, and flushed countenance. The efforts to vomit are strong, irresistible, and painful, but they produce only scanty evacuations, which consist almost entirely of bile; the purging is also painful, and the stools contain nothing but bile, with sometimes a little blood. The pain in the stomach and intestines is generally excruciating, and is accompanied by severe spasms, which also attack the muscles of the legs, and sometimes almost all the voluntary muscles of the body. The thirst is constant and burning, and is not alleviated by any kind of drink, which is immediately rejected by the stomach. The countenance is flushed, expressive of great pain, and the eyes are generally inflamed. The blood flows freely from a vein, is not darker than usual, and separates readily into serum and crassamentum. Returning health is indicated by the pulse becoming soft, by perspiration bursting out upon the skin, and by the evacuations becoming more copious, less bilious, and expelled with ease, and without pain. All these symptoms are exactly the reverse of those I have already described as belonging to the epidemic cholera.

The combination of the two diseases may give rise to two principal modifications: first, the attack may be ushered in under the form of cholera morbus, and may degenerate into that of the epidemic; secondly, the symptoms of the two may be combined throughout the case, and thus modify each other. Both have been noticed by different authors who have treated of cholera; but having been entirely overlooked by others, we may conclude that they have not been of very frequent occurrence.

The first modification is described in Mr. Orton's work on Cholera, in the following words: "I have found a very considerable number of cases," says he, "exhibiting singly, or in partial combination, every possible degree, and almost every kind, of increased action. Spasms, such as not to fall short of the highest degree of tetanus; retching, and spasms of the intestines equalling colica pictonum; very full, hard, and quick pulse; hot skin and flushed surface; evacuations of bile, both by vomiting and stool, from the commencement of the attack. And, finally, I have seen some of these cases passing into the low form of the disease; the circulation passing suddenly from extreme strength to extreme weakness; the skin, from being hot and dry, becoming deadly cold, and bathed in sweat; and the increased flow of bile succeeded by white stools and vomiting, clearly indicating the total suppression of that secretion." Nothing can be more distinct than this description; in the first part of which we find the most marked features of cholera morbus, and in the latter part the no less characteristic symptoms of the epidemic; and it could not have been stated in clearer terms, even had it been given for the express purpose of illustrating the views I have taken of the disease. In some cases the symptoms of the cholera morbus continue but a very short time; a few bilious evacuations, and a quick hard pulse, being soon replaced by watery stools, a small pulse, collapse, &c., and the disease becoming thus converted into the usual form of the epidemic.

The symptoms of the second modifications, or of those cases in which the two diseases are blended together, vary considerably, according as the one or the other predominates. If the discharges are not very copious, the pulse generally keeps up, and the skin continues warm; but, as soon as the evacuations become watery, and the true cholera secretion makes its appearance, then the blood retreats from the surface towards the viscera, the skin becomes cold, the pulse small, and collapse takes place. Sometimes the pulse has continued pretty full, and the skin hot, when there has been no bile in the evacuations. Sometimes the evacuations are more abundant than in common cases of cholera morbus, and contain a good deal of serum, but are at the same time mixed with bile; the heat of the skin suffers little diminution, and the pulse is variously affected, being occasionally quicker and smaller than usual, and in other instances continuing soft and full. Cases, again, have been met with in which there was no vomiting, but constant purging, and in which the skin continued hot, and the pulse but little affected. It would be endless, however, to mention all the varieties which have been observed in different visitations of the disease.

All these mixed cases are less dangerous, and less rapid in their progress, than the pure catarrhal cholera, and are much more frequent among the robust and plethoric than among the weak, and, consequently, among Europeans than among natives of India.

Dr. MONAT describes* a visitation of cholera which occurred in his Majesty's 14th regiment, at Berhampore, in March and April 1828, which affords a good example of the manner in which the inflammatory and catarrhal cholera are sometimes blended. Many of the cases were of the pure catarrhal form, the attack having been sudden, the evacuations copious and without bile, the pulse small or imperceptible, and the skin cold and shrunk. There appears to have been no unalloyed case of the pure inflammatory cholera, but numerous cases partook of many of the characters of that disease, some or all of the following symptoms having been present: pain at the præcordium, or in the belly, purging and vomiting of bilious matter, skin hot, pulse quick; and these were either accompanied or followed, unless the disease was soon checked by medicine, by the more characteristic features of the catarrhal cholera. The latter was by far the more fatal form of the disease; "but," says Dr. Monat, "several with bilious vomiting terminated fatally."

It is to be regretted that the author has given a very imperfect description of the post-mortem appearances, and he has given none of his cases in detail; but I have selected a few from a short abstract at the end of his memoir, and have inserted them in the appendix, in order to shew, as far as possible, the nature of the symptoms by which these mixed cases were characterised.

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* Transactions of the Medical and Physical Society of Calcutta, vol. iv.

Cases have sometimes occurred in which the catarrhal cholera has been followed by inflammation, and at length by ulceration, or other organic lesions of the bowels; but which have been very rare, having not been even mentioned by the greater number of writers, and I know no author who has described them in detail except Mr. JAMESON. I will therefore give that author's description in his own words.

"When the disease," he says, "ran its full course with Europeans, and with natives of robust athletic make, the following appearances generally presented themselves. What may be termed the cold stage, or state of collapse, usually lasted from twenty-four to forty-eight hours, and was seldom of more than three complete days' duration. Throughout the first twenty-four hours, nearly all the symptoms of deadly oppression, the cold skin, and oozing of clammy sweat from every pore, the feeble pulse, occasional vomiting, purging, and cramps, the thirst, and anguish, continued undiminished. Then the system shewed symptoms of revival, the vital powers began to rally, the circulation and heat to be restored, and the spasms, sickness, and desire to go to stool, to be considerably lessened. The warmth gradually returned, the pulse rose in strength and fullness, and then became sharp, and sometimes hard; the tongue got more deeply furred; the thirst continued, with less nausea; the stools were no longer like gruel, or rice-water; they usually, between the third and sixth day, became first brown and watery, then dark-green, black, and pitchy, and the bowels, during many days, continued to discharge immense loads of vitiated bile, until, with returning health, the secretions of the liver and other viscera gradually put on a natural appearance. These discharges were generally hot and acrid, and passed with griping and tenesmus. Sometimes they were of a bright-yellow colour, and the surcharge of bile was so great as to be ejected in a pure stream from the stomach. It was remarked that, when the motions consisted of a chocolate-coloured fluid, with flocculi swimming in it, the patient rarely recovered.

"The fever, which almost invariably attended this second stage of the disease, may be considered to have been rather the result of an effort of nature to recover herself from the rude shock which she had sustained, than as forming any integrant and necessary part of the disorder itself. It partook much of the nature of the common bilious attacks of these latitudes. There was the hot dry skin; the foul, deeply-furred, dry tongue; parched mouth; thirst; sick stomach; depraved secretions; restlessness; watchfulness; and quick, variable pulse; sometimes with delirium, stupor, and other marked affections of the brain.

"Generally, when the disorder proved fatal, after reaching this stage, the tongue, from being cream-coloured, got brown, and sometimes black, hard, and more deeply furred; the teeth and lips were covered with sordes; the state of the skin varied, chills alternating with heats; the pulse became extremely quick, weak and tremulous; hiccough, catching of the breath, great restlessness, and deep moaning succeeded; and the patient soon sunk, incoherent and insensible, under the debilitating effects of low nervous fever, and frequent dark, tarry, alvine discharges.

"In other cases, this secondary period ran a somewhat different course. As the action of the heart and arteries was renewed, and the natural warmth of the body returned, an unusual degree of energy succeeded. The brain was evidently affected, and the patient was quite insensible to the great danger into which he had fallen. The pulse rose as high as 120; great heat, especially over the large cavities, was complained of. There was extreme agitation and distressing thirst. The patient continually called for cold water, to relieve the burning sensation of the abdomen. Sometimes a warm perspiration broke out near the wrists and forehead, which afforded temporary relief to his sufferings. To this state of excitement, that of collapse quickly succeeded. There was then great prostration of strength, the bowels became quite torpid; severe pains occurred low down in the abdomen, near the site of the rectum, which were always aggravated upon stools being procured by medicine. The state of the stomach now excited surprise; its natural irritability was entirely gone, and the most nauseating medicine could be poured into it without exciting vomiting. It rarely occurred that the patient survived the great sinking produced by this stage; and even when good fortune, and the strength of his constitution, carried him through it, he suffered long after from debility and disordered bowels."*

I will here recapitulate some of the most important facts detailed in this chapter, in order to bring them at once plainly, before the reader. 1. There are two distinct kinds or species of cholera, viz. the catarrhal and inflammatory (cholera catarrhalis, and cholera pyretica.) The most constant and characteristic symptoms of the former are copious discharges by vomiting and stool of a sero-fibrinous fluid; retreat of the circulating fluid from the surface towards the viscera; dark coloured blood; collapse; cold damp skin. The symptoms of the latter are vomiting and purging of bile; pulse full and hard; skin hot and dry; spasms. 2. The catarrhal cholera is the most common form of the disease in epidemic visitations, and is much more dangerous than the other. 3. The inflammatory sometimes degenerates into the catarrhal cholera, and the two are occasionally combined in the same case.

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* Bengal Report, pp. 53—56.

Prognosis.

Little need be said under this head, after the numerous observations I have already made upon the nature of the different symptoms. When an attack commences with symptoms of inflammatory cholera, or with increased action of the circulation, and the patient is seen before the violent symptoms of this form of the disease, such as severe vomiting, pain, heat of skin and spasms, give way to collapse, the case may be considered completely within the reach of art; but when these symptoms begin to pass off, and to be followed by cold skin, shrunk features, loss of pulse, watery purging, &c., the case must be considered as one of great danger, and requiring the most prompt measures. In the true catarrhal cholera every moment is of importance, and the shortest delay may seal the fate of the patient; for if he be seen before the blood has left the surface to accumulate about the internal viscera, before the pulse has ceased at the wrist, and the skin has become cold, we may entertain great hopes of being able to overcome the malady. But if the pulse has ceased, the skin become cold, the features shrunk, and the vomiting and purging have stopped, then our prognosis must be bad indeed.* Even such cases, however, must not be abandoned; I have seen many of them brought round by energetic measures. It must be evident, from all that has been said, that the diagnosis, in cholera, must be principally derived from the pulse. If we find it to increase in strength and size, there is cause for hope; and if this favorable symptom be accompanied by the restoration of warmth on the surface, and the reappearance of the secretion of urine and bile, the patient may be considered safe, although still requiring the most watchful care to prevent a relapse; for a draught of cold water, or exposure to external cold, have sometimes been known to cause a renewal of the disease, after the patient had been considered out of danger.

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* Mr. Scot says, "The danger of cholera may thus be said to be manifested, not by the violence of morbid actions, but by the diminution or cessation of natural actions." This however is only apparent; for, if we look below the surface, we find that the danger may be measured by the violence of that morbid action which we have shewn to constitute the disease, viz. the catarrh of the mucous membranes, while most of the other natural functions are diminished.

CRITICAL ANALYSES.

Quæ laudanda forent, et quæ culpanda, vicissim,
Illa prius, cretâ; mox hæc, carbone, *notamus.*—Persius.

A Treatise on the Venereal Disease, and its Varieties. By Wm. Wallace, m.r.i.a. &c. &c. &c., Surgeon to the Jervis-street Infirmary, Dublin; and to the Infirmary established in that City for the Treatment of Cutaneous Diseases, including Venereal Diseases.—8vo. pp. 382. Burgess and Hill, London.

By those who are best acquainted with the subject, it will be readily conceded that there are still many very important practical questions regarding both the pathology and treatment of that class of disease to which our attention is directed by Mr. Wallace, which admit of additional discussion, and further investigation, than they have yet received from the numerous writers who have preceded him. Something of value cannot fail to be added to our stock of information by every intelligent surgeon who has a fair field for observation of venereal diseases, and who is not so bound to any particular master, or any particular doctrine, as to lead him "to wrest nature from her track," in order to support the theory to which he may happen to be a proselyte. The official situations which Mr. Wallace holds ensure him sufficient experience of venereal diseases, in all their varieties, and the perfect candour with which he treats of every doubtful and disputed point, and the clear account he gives of their symptoms and treatment, demand our approbation, and justify us in recommending his work to the attention of his professional brethren. Impartiality in medical discussions is not often met with; we too generally find writers indulging in *ex parte* evidence, for the purpose of strengthening their own side of the question; and we fear that, in general, medical works are so superficially glanced over, that the author who has recourse to so unfair a mode of conducting an argument passes undetected and unreproved. In this point of view Mr. Wallace's work will bear, we think, the strictest examination. His object appears to be that which ought alone to influence the mind and guide the pen of every professional writer, namely, a faithful description of what he has himself seen, and a candid examination of the evidence which has been afforded by others.

In the preface, Mr. W. informs us that it was his original intention to illustrate his opinions regarding venereal eruptions by an appropriate selection of delineations, of which he has accumulated a large number. The expense of such an undertaking, and the necessary cost of such a work, would have prevented its circulation among a large class of readers; and he therefore determined to publish the letterpress first, as a distinct work, in the form of a practical synopsis, and afterwards the illustrations, in periodical fasciculi. In conformity with this plan, therefore, the present volume appears, and will be soon followed by another, comprising the remainder of the letterpress, and afterwards by the illustrations, many of which are ready.

This volume includes the whole of the primary symptoms, and these alone; it is complete in itself, and independent of that which is to follow.

In the first chapter the following questions are discussed. Are venereal diseases produced by a specific cause, or morbid poison? or do they arise from common causes of irritation? Are venereal diseases produced by one poison, or by a plurality of poisons? It has been affirmed by one class of pathologists, that venereal diseases are caused by a highly contagious matter, called the venereal poison; that this poison is propagated from the diseased to the sound subject, provided it be placed in contact with a denuded surface, or with those surfaces which are naturally covered by a thin cuticle; that it first produces local disorder, or, in other words, primary symptoms; and, lastly, that this poison sooner or later produces that series of symptoms called secondary, and which appear on parts more or less remote from the seat of the primary disease. On the other hand, it is affirmed that there does not exist any venereal poison, or any specific disease, the consequence of such a poison; that the primary symptoms of venereal diseases are the product of an irritation excited on the living surface by various causes, as mechanical violence, morbid or purulent secretions from the inflamed or ulcerated surfaces of the organs of generation, &c.; that the constitutional symptoms depend on the sympathy naturally existing between all parts of the organization, and particularly between the organs of generation and many other organs and tissues of the body; and, finally, that those diseases which are commonly called venereal are, in reality, several, or various diseases, arising from various sources, modified by constitution, climate, regimen, treatment, &c. &c. The former opinion was maintained by ASTRUC and HUNTER, and is generally adopted in this country at present. The latter hypothesis is of a comparatively modern date, and has been of late years strenuously supported by several French authors. "It is also the opinion advocated in a work on Syphilis, now in progress of publication in Paris, which, from its magnitude and the number of contributors, may be considered a national undertaking."

Mr. Wallace enters into a very impartial investigation of these questions; and, in our opinion, the arguments he adduces leave us no other alternative than that of fully coinciding with his conclusion, "that venereal diseases are the product of a peculiar morbid poison; for their analogy with other diseases which are acknowledged to arise from morbid poisons sanctions this hypothesis; there are no phenomena opposed to it; and the origin, as well as the characters, of venereal maladies, during their progress, cannot be explained, unless by the supposition that they are the effects of a specific cause." We cannot dismiss this very interesting question without giving the following extracts, which will probably remove a few of the difficulties that some of our readers may feel in agreeing with the author.

"It is affirmed that venereal diseases have, on certain occasions, arisen spontaneously; or, in other words, that they have appeared under circumstances in which the existence of a specific virus could not be suspected. This has been adduced as a powerful argument against the hypothesis of a specific venereal poison. But has it been satisfactorily ascertained that the syphilitic disease does ever appear spontaneously, or under circumstances in which we may not fairly presume the existence of its specific cause? The examination of this question is reserved for a future period; and at present it is admitted, for sake of argument, that venereal diseases may spontaneously arise. But does the apparently spontaneous origin of these diseases overturn the hypothesis of a specific virus? Who can divine the exact nature of the circumstances under which an apparently spontaneous origin of venereal diseases may have occurred? It is by no means impossible for specific morbid poisons, and consequently the diseases which they produce, to arise from the synchronous operation of certain, but hidden causes, although they appear to spring up spontaneously. All contagions, all morbid poisons, must have had an origin. We cannot presume that they have existed from eternity; for, as Mr. Hunter observes, 'animals are not naturally formed with disease, or so as to run spontaneously into morbid actions;' and it is not in opposition to the general laws of nature to infer, that if a morbid poison has commenced at one period from the concatenation or combination of its essential causes, it may also commence in a similar way at other periods. On the contrary, such a supposition is in perfect unison with daily occurrences: for do not certain contagions frequently spring up, and again die away from combined causes, whose mode of action we are not always able to appreciate? It is therefore evident, that from the apparently spontaneous origin of venereal diseases, if such an origin has been observed, no proof in favour of the non-existence of a syphilitic virus can be fairly deduced." (P. 8.)

"It is allowed by all, that we know nothing of any virus or morbific poison, unless by the effects which it produces on the animal economy; for morbid poisons do not, as separate or distinct entities, make any impression on our senses. Therefore, as we can define a virus or morbific poison only by describing its effects, we must inquire what these effects are. Now, while it is admitted that the effects of each specific virus are different, it is also admitted that one common law or general character governs the action of each, viz. the power of producing, when applied under favorable circumstances to the animal economy, a certain effect or disease; which, although variable from the influence of general causes, is always subject, in its progress or development, to laws sufficiently peculiar to distinguish it from all other diseases, and from the effects of all other morbid poisons." (P. 4.)

"*Are venereal diseases produced by one poison, or by a plurality of poisons?*" In direct opposition to those who are inclined to maintain that there is *no* venereal poison at all, may be placed another party, who advocate a *plurality* of venereal poisons with equal zeal and confidence. Some pathologists suppose that the varieties of disease which result from promiscuous intercourse are so dissimilar, and that each variety is, at the same time, so regular in its own phenomena, that they cannot be explained without presuming the existence of a plurality of venereal poisons, each causing its own specific effects. Hunter and Swediaur first propagated this latter doctrine, and it was afterwards extended by Adams and Abernethy. More recently Mr. Carmichael has pursued this subject, and he has formed it into a regular system, according to which there exist four distinct or dissimilar morbid poisons, each producing its own specific effects; and to one or other of these morbid poisons all the varieties of venereal disease are by him attributed, as effects to their causes. All the arguments used in support of the hypothesis of a plurality of venereal poisons are reduced by Mr. W. to the following heads.

"1. Some of the diseases which result from venereal intercourse require mercury for their cure or removal, while others are curable without this remedy, and would often be injured by its employment. Therefore, the former class of diseases must be of a totally different species from the latter, and produced by distinct morbid poisons.

"2. Historical evidence demonstrates that certain forms of venereal diseases existed from the earliest ages, and that to these was added, after the discovery of America, a new and peculiar disease.

"3. Certain diseases, nearly allied in their general characters to each other and to venereal diseases, have been observed in Canada, Scotland, and the West Indies, &c. yet they are considered the product of different morbid poisons; and as these diseases do not differ more widely from one another than the varieties of venereal diseases differ from each other, we have the same reason for supposing that the varieties of venereal disease result from poisons specifically distinct, as we have for supposing that the diseases in question arise from different poisons.

"4. The symptoms of all diseases, which are caused by morbid poisons, are regulated by laws so fixed or determined, that they are always uniform in their appearance and progress; but the diseases which result from venereal intercourse, if considered as the consequence of one morbid poison, exhibit the most dissimilar characters, and must therefore be owing to the action of dissimilar poisons.

"5. The symptoms of venereal diseases, though numerous and varied, form certain determinate groups, in which we observe peculiar forms of primary symptoms followed by corresponding forms of constitutional disease, and the primary and constitutional symptoms of each group resemble one another in their general character, or in their degrees of mildness or severity; while the primary and secondary symptoms of any one group are, in their orgin as well as in their progress, altogether different from the corresponding symptoms of the other groups; and these circumstances cannot be explained, unless by the supposition that each group is produced by its own peculiar specific cause or morbid poison." (P. 14.)

These arguments are separately examined by Mr. Wallace, and, in our judgment, he completely refutes the doctrines of Mr. Carmichael. We condense the replies he offers to them. He observes, in the first place, that experience has shewn that every form of venereal disease with which we are acquainted may be cured without mercury; hence we have no proof that there are two classes of venereal disease, distinguishable from each other by the one requiring mercury for its cure, while the other is curable without this remedy. Those who support the doctrine that a new disease was introduced into Europe after the discovery of America, are compelled to admit that it is impossible to distinguish the symptoms of this new or real syphilitic disease, as they denominate it, from those of the other forms of venereal disease; and they affirm that a line of distinction can be drawn between them only by the influence which mercury exercises over their progress. The third argument may be admitted without injury to the views of those who deny a plurality of venereal poisons. Upon the fourth considerable stress is laid by the advocates of the opposite opinion, and Mr. W. therefore considers it at some length He first remarks, that impressions which result from causes, as far as we can form an opinion, exactly similar, often produce upon different persons very dissimilar consequences. As an example, the effects arising, in different individuals, from clean punctured wounds are adduced. The characters of vaccina, which are considered specific or pathognomic, are referred to; and it is shewn that they are not so uniform as not to exhibit varieties analogous to those of the venereal disease, and therefore analogous varieties in the appearance of the symptoms which result from the syphilitic virus cannot be considered as any proof of the existence of different venereal poisons.

"It may however be said that the preceding facts bear solely on the primary symptoms, or those produced by the direct application of a morbid poison; and that, although their varieties might be the effect of one morbid poison, we are unable to explain the still more remarkable varieties which are to be observed among the secondary venereal symptoms or eruptions. In reply to this observation, it is only necessary to consider the varieties exhibited by small-pox, which is an eruptive disease produced by a morbid poison, acting through the medium of the constitution." (P. 20.)

"But it may be said, that the effects of syphilis on the skin are sometimes erythematous, superficial, flat, diffused, and scaly, and that these forms differ so essentially from the circumscribed and excavated forms of venereal eruptions, that we cannot suppose the one to be a variety of the other. I admit it to be true that the transition from papular to pustular, or even to tubercular or vesicular cutaneous disease, is more natural and easy than from the erythematous and scaly forms to those of the more circumscribed character, or *vice versâ*: nevertheless, the progress and conversions of many cutaneous diseases satisfactorily demonstrate that such changes may occur among eruptions. Thus pustular impetigo frequently changes to scaly psoriasis. Therefore, as such conversions do occur between these opposite forms of cutaneous inflammations, a similar phenomenon may of course be exhibited by venereal eruptions.

"But, if we return for an illustration to small-pox, we shall find this disease again supporting our views. In fact, the eruption, in certain epidemics of small-pox, has exhibited so much of the diffused or erythematous character, that it has been mistaken for measles. A modern author observes, 'it not unfrequently happens that the papulæ do not rise kindly, but assume the form of stigmatized dots, while the surface is circumfused generally with a brighter or deeper efflorescence, according to the nature of the habit; under which circumstances the disease (variola) makes a near approach to rubeola, and has been mistaken for it.' The same author further adds, that 'in the confluent variety of small-pox, we frequently meet with traits of vesicular and fiery erythema, not unlike in appearance the ignis sacer of the plague;' and Mr. Marshall, in his account of an epidemic small-pox which prevailed in the Kandyan provinces, says there were cases of this disease which assumed a measly appearance." (P. 22.)

As one morbid poison, influenced by extrinsic circumstances, is sufficient to produce all the varieties of small-pox, one poison may, if influenced by similar circumstances, produce analogous varieties of syphilis. Hence it is not necessary to infer, from the varieties observed among venereal eruptions, that there exists a plurality of venereal poisons.

"5. Have the assertions contained in the fifth argument, as detailed at page fifteen, and which constitutes the especial doctrine of Mr. Carmichael, been verified by the experience of other practitioners?

"It is stated, in a circular letter from the army medical department, dated April 2, 1829, and which announces the results of observations made, under the most favourable circumstances for investigation, upon nearly five thousand patients, treated with and without mercury, 'that it appears that no peculiar secondary symptoms are seen to follow from peculiar primary ones; and this general conclusion is unanimously supported by the extensive experience of Messrs. Guthrie, Hennen, S. Cooper, Bacot, &c." (P. 24.)

The worst forms of primary symptoms may occur, without being followed by any secondary symptoms whatever; and mild constitutional symptoms are often produced by the most severe local disease. On the other hand, the most severe secondary symptoms sometimes succeed primary symptoms, which have been so trifling that they have healed without any medical treatment, or so free from pain and inflammation that they have scarcely attracted attention.

"Many facts of a similar kind might be added; but, from what has been said, it is evident that experience denies the existence of that kind of connection which, in Mr. Carmichael's opinion, prevails between the different forms of primary and secondary symptoms of venereal diseases." (P. 25.)

"I admit, that even the occasional sequence of certain forms of constitutional disease after certain forms of primary disease, must naturally lead to the presumption, that there exists some necessary connection, or some common cause of similarity of character. But what is this cause? Is the poison, which has produced each form of primary symptom and its corresponding form of constitutional disease, of a distinct and peculiar species? or is the occasional connection of peculiar secondary symptoms with peculiar primary diseases owing to some cause of modification in the recipient or person infected, which has acted similarly on both the primary and secondary symptoms? After what has been already said, I may fairly leave the reader to decide this question for himself, making first one observation. What are the causes which so modify the effects of the venereal virus, that the same poison, or poison derived from the same person, may produce in different other persons consequences or symptoms of a most dissimilar character? a fact now universally admitted." (P. 26.)

It therefore appears that, although certain forms of secondary symptoms have been occasionally observed to follow certain forms of primary ones, such an occasional coincidence is quite insufficient to establish the hypothesis in question; for, before such an hypothesis could be admitted, it would be necessary to demonstrate that, as far as our knowledge extends, certain primary symptoms are always followed by their own, if by any, secondary symptoms; and that certain secondary symptoms cannot be preceded by any other than by their own primary symptoms. It is also evident that if, on any one occasion, the reverse has been observed, that one occasion would be sufficient to overturn the hypothesis, so far at least as the particular form of disease observed is concerned.

"From all that has been said, we are evidently authorized to conclude, in answer to the fifth argument, that the assertions which it contains are in opposition to general experience; and also that, should a coincidence of certain forms of primary symptoms with certain forms of secondary symptoms be occasionally observed, it would afford no just reason for concluding that such groups are the product of distinct poisons, as the occasional combinations of certain primary with certain secondary symptoms can be easily explained by simpler and more natural causes.

"It is now evident that the question respecting the plurality of specific venereal poisons might be dismissed; but, lest it should be supposed that other arguments of more weight could be advanced in support of this hypothesis, I will proceed further, and demonstrate that it is an hypothesis which is incompatible with several of the phenomena of venereal diseases; and that there are other phenomena, connected with the origin or causation of these maladies, of which it affords no explanation, which would not be the case if it were founded in nature.

"Eruptions of opposite characters, or (more correctly speaking) eruptions which Mr. Carmichael has placed in separate classes, may occur in consequence of the same infection, on the same individual, and at the same time. Thus we are told by Mr. Hennen, in his Principles of Military Surgery, that he has observed the papular, the scaly, and tubercular eruptions united in one person, and the tubercular and the scaly in another. Mr. Lawrence has remarked, in the same individual, the tubercular and scaly forms of eruption. The union of the papular and pustular eruptions is an occurrence of almost daily observation; and we very frequently observe the tubercular and pustular combined.

"Nor is it unusual to witness a succession of dissimilar eruptions in the same patient at different times, and proceeding from the same original infection. Thus, an individual may be attacked by one form of eruption, and in the course of some time that form may disappear, and an eruption of a different character may follow, although he has not received any new infection. Of this description of case we have an example recorded by Mr. Hennen, in which a papular, a vesicular, a pustular, and a scaly eruption, followed the same primary ulcer in the same person, but at distinct intervals.

"It is scarcely necessary to remark that diseases, supposed to be totally different from one another, have been produced in different persons, and even in the same person, by their connexion with the same individual, as such facts are now universally known, and recorded in works which are in the hands of all.

"It thus appears, from what has been just said, that the same infection may produce dissimilar forms of constitutional disease in the same individual, either at the same time or at different times, and also different forms of primary disease in different individuals, or even in the same individual; all of which phenomena are incompatible with the hypothesis that the varieties of venereal diseases, either primary or secondary, are dependant on, or arise from, specific varieties of poisons.

"Again: certain individuals have been observed to contract the same form of disease, and no other, whatever might be the source of infection to which they had been exposed. Thus some persons uniformly get discharges from the urethra, and as uniformly escape ulceration, or *vice versâ.* A case particularly bearing upon this point has been recorded by Mr. Rose, of 'a healthy young man, who was affected with a decidedly sloughing sore on the penis, in consequence of a suspicious connexion. It was not attended with any constitutional disturbance, and yielded readily to mercury: He twice afterwards, at a very considerable interval, had a fresh infection, and the sores each time had precisely the same character with the first.' I have also known many persons, whose primary symptoms were always, and for several times, succeeded by the same form of secondary symptoms. Such occurrences, as well as the analogous ones respecting the primary symptoms, and which, as Mr. Rose observes, are not 'uncommon,' can be explained in only one of two ways. We must suppose that the peculiar disease which uniformly occurred in each individual at different times was owing either to peculiarity of constitution, or to having accidentally received, each time of infection, the same form of morbid poison, out of the plurality which is presumed to exist. I need not point out to the reader the many chances against the second mode of explanation, and consequently that the hypothesis of a plurality of poisons does not explain in a satisfactory manner such occurrences." (P. 28.)

Mr. Wallace enters into a consideration of some other opinions which have been maintained by Mr. Carmichael; but for these discussions we must refer to the work itself.

In the second chapter, a very interesting and careful account is given of "the morbid states, or actions, produced by the direct application of the venereal poison." The symptoms and treatment of primary syphilis form the subjects of the succeeding chapter. We must confine ourselves to the leading practical opinions of Mr. W., which refer to the treatment.

"It may be laid down as a general rule, that the prevention of inflammation and its consequences, of morbid sensibility, and of indolent action, is to be anxiously kept in view during every stage of primary syphilis; for, if any of these morbid states be produced, the case is thereby complicated, and the difficulty of treatment greatly increased.

"It is well known that a certain degree of over-excitement, whether local or constitutional, will cause in one person violent inflammation, its concomitants, and consequences; and that the same degree of excitement in a different person may produce morbid sensibility or irritability; while, under other circumstances, or in other habits, indolent action and induration, &c. may ensue.

"If therefore undue excitement, either local or constitutional, may cause those morbid actions which retard or oppose the cure of primary syphilis, and complicate the indications of treatment, it follows that, during every stage of the disease, great attention should be directed to guard against its occurrence. Indeed, if this all-important principle were carefully acted upon, the disease would, in a vast number of cases, speedily cicatrize without the interference of art. In fact, the closest attention to the great principle of preventing undue or inappropriate excitement should not cease from the commencement of the treatment, until the disease has been brought to a conclusion. Whatever may be the remedies which he is using, the practitioner should be always on the watch, ever fearing the possible occurrence of unfavourable actions; and the moment he remarks those minute changes which point out or foretel the approach of any deviation from the natural characters or progress of the disease, he should pause, and reflect on their cause: in short, he should then modify his treatment, or change it altogether. For it is in accurately observing the very commencement of these changes, and in immediately altering the treatment accordingly, that the skill of the practitioner will be particularly exhibited; and it is the want of this observation, and a blind perseverance in a plan of treatment no longer suited to the individual case, which has led to so many revolutions in practice, and which has frequently caused the most dreadful consequences to result from primary syphilis, which had commenced with the mildest characters.

"Gentleness in handling, unirritating applications, cleanliness, rest, and position, the judicious regulation of regimen, and protection from vicissitudes or intemperance of atmosphere, are the measures for preventing, in constitutions otherwise healthy, this undue excitement.

"It does not appear necessary to speak in detail respecting the employment of these measures, as they are to be used according to the general principles of surgery. It is sufficient to observe, that the practitioner should be more or less particular in the strictness of his rules, according to the nature of each case.

"The directions just given are not, however, to be received as implying that we are never to use such remedies as are commonly denominated stimulants or irritants. These are relative terms: and that application which, at one time or in one case, may act as an irritant or stimulant, may produce, at another time, &c., the very opposite effects. It is therefore merely intended to direct that all applications, of whatever kind they may be, which are found to irritate the disease, or to produce the morbid states above mentioned, or in fact any state which seems to obstruct the progress of cicatrization, are to be omitted, or carefully avoided, the moment that their deleterious influence is observable.

"The treatment suited to primary syphilis varies, according as it may be in the stages of destruction, or in the stages of reparation." (P. 89.)

We seldom have an opportunity of observing primary syphilis before the stage of ulceration, but "if a case presents itself during the first stage, and while the part is only in a state of circumscribed phlogosis, the diseased structure may without hesitation be snipped off, the wound allowed to heal, and, for security against secondary symptoms, the patient should be treated constitutionally, as if he had not applied until the disease was more advanced.

"It is during the ulcerating stage of primary syphilis, or when the process of granulation has only partially commenced, that our assistance is for the most part sought; and, when the disease is in this stage, there is no doubt on my mind of the propriety or practical utility of immediately applying the nitrate of silver in such a manner as to destroy the diseased surface. I have treated, over and over again, primary syphilitic ulcers with this caustic, and others without it, in the same individual, at the same time, and under circumstances as nearly as possible similar in every respect; and the result has uniformly demonstrated the very great advantage of the former over the latter mode of practice.

"It will be recollected that I am speaking of primary syphilis in a constitution apparently healthy, the disease being in its state of simplicity, and in its stage of ulceration; and if the caustic be applied, under such circumstances, in a proper manner, it will very much shorten the progress of the local disease: it will stop the process of ulceration, and, by preventing in a great measure the necessity of the stage of granulation, it will lead directly to cicatrization. It destroys a surface which seems to have a power of contaminating, for a limited period, continuous parts; and therefore, although actions of reparation would sooner or later spontaneously commence, these actions are hastened by the destruction of the contaminating surface. But, on the other hand, when the process of reparation is already advanced, nothing can be gained, but much injury may be done, by an escharotic application; for, at that period, all the actions are tending to cicatrization, and the destruction of the newly-formed granulations must have the effect of retarding this process.

"I have already alluded to a resemblance in appearance between the ulcer which succeeds the pustule of variola and the ulcer which succeeds the pustule of syphilis. Now it is remarkable, that the application of the nitrate of silver to the pustules of variola, if made within the two first days of the eruption, and in such a manner as to produce a slough, arrests their further progress. This curious fact, which was lately communicated by M. Velpeau to the Académie Royale de Médecine, has been since confirmed several times by myself. I do not however mean, from such results, to derive any direct argument in favour of the application of caustic to the pustules or ulcers of primary syphilis; but the fact ascertained by M. Velpeau is valuable, as demonstrating that the power of an escharotic to control the action of disease caused by a morbid poison is not limited to syphilis; and also that the success or the efficiency of the application of caustic in variola, as well as in syphilis, very much depends on the period at which it may have been used.

"If the disease be in a fit state for the application of the nitrate of silver, this substance should be pointed before using, and then rubbed carefully on every part of the ulcerating surface, (previously cleared, by poultice or emollient lotions, of all incrustations,) until the edge of the ulcer be rendered black, and the surface of a deep-ash colour. But, should any portion of the ulcerated surface have entered on the stage of granulation, that portion is to be avoided, and the application of the caustic confined, as much as possible, to such parts of the sore as are still in the stage of ulceration.

"In making this application, it will be observed, that whatever portion of the sore may be in the stage of ulceration yields much more rapidly to the action of the caustic than such portions as are in the stage of granulation. Indeed, the rapidity with which the vitality of the former is destroyed by the nitrate of silver is very remarkable. This is, however, what might be expected, when we reflect that the ulcerating surface, being *in transitu* to perfect disorganization, must have a power of resistance inferior to that possessed by a granulating surface, which is the seat of reparatory actions. We have also, from this circumstance, a fresh proof of the correctness of the views which have been taken in the preceding pages of the process of ulceration." (P. 92.)

Mr. Wallace does not recommend the caustic to the exclusion of the mercurial treatment; and the objections urged against its application, upon the ground of its not preventing secondary symptoms, are not therefore worthy of attention.

"On the whole, he who opposes the employment of this remedy, under the circumstances above detailed, must have founded his opposition on prejudice or timidity, both of which generally spring from ignorance; or else his powers are unable to distinguish between those cases in which it should be employed and those in which it should not; or having, perhaps, made some injudicious applications of it, he has never afterwards been able to subdue those fears which have resulted from his former ignorance." (P. 99.)

"When the primary syphilitic ulcer has been brought, by the application of the nitrate of silver, &c., to the state above described, or when, from the presence of symptoms already detailed, it appears that the stage of reparation has commenced in every part before we have been consulted, the local and constitutional treatment should be in general essentially mercurial. It is not, however, to be supposed that mercury is indispensable for procuring cicatrization; for when the primary syphilitic ulcer has arrived at the stage of granulation, the healing process will for the most part advance, though slowly, under the influence of a due degree of appropriate stimulation, or even spontaneously, as I have occasion to demonstrate almost daily at the hospital, when, from the habits of the patient, or from any other cause, it is deemed prudent to refrain from the use of mercury.

"Why then, it may be asked, is mercury employed? I reply, to hasten the process of healing, and to diminish the chance of secondary symptoms. Nor are there many cases, in the whole range of the practice of surgery, which exhibit more remarkably the beneficial influence of medicine. We shall often observe that, in twenty-four hours after mercurial treatment, conducted in the manner recommended hereafter, has been commenced, the appearance of the ulcer will change, and, from being of a dingy yellow, or ash-coloured white, will become of a healthy red; while this alteration in colour will be quickly followed by the process of cicatrization. It is also important to observe, that these rapid changes may be often produced by the local application of mercury alone; but others soon occur which are of equal, or more importance, and are principally, if not entirely, attributable to its action on the constitution. These latter changes are especially denoted by a diminution of the tumidity of the base of the ulcer.

"That any one who has carefully observed the operation of mercury upon a syphilitic ulcer, when this medicine is appropriately employed, should doubt its utility, is to me difficult of explanation. In fact, under the judicious use of mercury, the cicatrization of primary syphilis often follows the stage of ulceration with such rapidity, that there is not time for the reparation of lost parts by the process of granulation, and the ulcer is therefore healed with loss of substance. Whereas, if the sore be left to the unassisted powers of the constitution, the stage of granulation commences as soon as ulceration has ceased, and in general continues until the cavity of the ulcer has been filled to a level with, or raised above, the surrounding parts.

"The power of mercury to suspend, as it were, the granulating stage of syphilitic ulcers, by promoting the stage of cicatrization, is a curious and important fact, not hitherto remarked. Will it not assist to explain, in a satisfactory manner, the cause of some mistakes respecting the phenomena of syphilis into which pathologists have fallen? To allude at present to one: Mr. Hunter considered excavation a character of chancre, and his followers have looked upon this quality as indispensable. But we have found that, although one stage of the primary syphilitic ulcer be characterized by excavation, another is equally marked by the opposite character; hence the one quality may be considered as characteristic of this disease as the other. Yet this last quality does not appear to have been noticed by Mr. Hunter. How then has it happened that Mr. Hunter, so accurate an observer, and so cautious in general in drawing conclusions, was not acquainted with the elevated stage of primary syphilis? I reply, because he was not acquainted with the power of mercury to control this stage, or because he had never allowed the disease to pass through all its stages uninfluenced by mercurial treatment. It would appear that, whenever Mr.

Hunter saw a case of primary syphilis in the stage of ulceration, and consequently of excavation, he concluded that it was syphilitic; and, from the opinion entertained by him of the necessity of giving mercury, he immediately submitted his patient to its influence. This controlled the granulating stage, and produced cicatrization with loss of substance, or without granulation; and as Mr. Hunter evidently had never made himself acquainted with the progress of the primary syphilitic ulcer uninfluenced by mercurial treatment, he not only attributed this mode of healing entirely to the nature of the disease, and not at all to the action of mercury, but, whenever he observed a venereal ulcer in an advanced stage of granulation, he concluded that it was not syphilitic, or that it belonged to that class of disease which resembled syphilis. Nor was his judgment corrected when he observed the primary disease to be followed by secondary symptoms, because he was of opinion that secondary symptoms often followed those primary diseases which resembled syphilis. Indeed, on the contrary, his mind was further riveted in error when these secondary diseases became well without mercury; an event which, in his opinion, could not possibly happen if they were truly syphilitic. How inextricable is the labyrinth into which we are sometimes led by one fatal step; and how indispensable is it to examine, on every occasion, with the most rigid scrutiny, our premises, or the foundation of our reasoning!" (P. 100.)

We regret that our limits prevent us from entering more at length into the various subjects discussed by Mr. Wallace; but we cannot, in justice to him, conclude our notice of his work, without observing, that it contains abundant proofs of sound judgment and extensive experience, and that the surgeon and student will here find a most excellent practical description of the primary symptoms of venereal diseases.

Outlines of Botany; being a Practical Guide to the Study of Plants. By Gilbert T. Burnett, Professor of Botany in King's College, London, and Fellow of several Societies. Nos. I. II. and III.—8vo. pp. 174. John Churchill, London.

Encouraged by the example of more than one of our esteemed contemporaries, we sit down, with all due formality, to criticise our own production; and of a truth this practice is not uncommon, although it is not always that an author-reviewer is forced into the confessional.

Some timid persons exclaim "Save us from our enemies!" others, more prudent, "Save us from our friends!" but we find ourselves now compelled to breathe a still more humble aspiration, viz. "Save us from ourselves!"

Few persons have the means of writing a more just criticism upon any work than the author himself, if prejudice did not veil his eyes to the magnitude of errors of which he is conscious, or if the bright spots in the landscape were not dwelt on too constantly, and with too much self-satisfaction. Indeed, an example might be given of one of the most severe critiques ever penned having been written by the author of the work himself.

But, lest we should be blamed for over-severity to ourselves, or (what is more likely) for over-indulgence, we shall not pass any opinion upon the work before us, but let the author speak to our readers as he already has to the public, and let him explain the objects of his undertaking in his own words; and subsequently, if we have room, we will give a few short extracts, as samples of the way in which those parts already done have been performed.

The Prospectus tells us that these Outlines of Botany are intended as a practical guide to the study of plants, and are designed chiefly for the use of students; that the work will consist of several distinct portions, which will be published in separate fasciculi, each containing a condensed account of the principal points in the history, structure, functions, systematic arrangement, geographical and geological distribution, medicinal, dietetic, and other uses of one great natural division of the vegetable world; and, in furtherance of this scheme, the first fasciculus contains "a General Outline of the whole Vegetable Kingdom," introductory to the several classes which are to follow. The history of the first of these classes, the *Flags* or *Algæ*, has likewise now been published; and the history of the *Fungi* will shortly appear.

It is from the Outlines of Algologia that we shall make our promised extracts, only premising that the term is here used in its most extended and comprehensive sense, as including the whole of the Confervæ, Fuci, Lichens, and their allies.

Our extracts will be made quite at random from the different subdivisions of the essay.

"§ 177. OSCILLACEÆ. The QUICK MOSSES, or *Quiver-worts*, so called from the vibratory movements or oscillations of their gelatinous fronds, whence indeed is derived their technical synonyme *Oscillaceæ*, form the first type of the section CONFERVINÆ. There are some of them aerial and some aquatic plants; they abound in damp shady situations, in the sea, in ponds, ditches, streams, and even in thermal springs, such as those of Bath, and are of much use in fixing loose sand, and aiding in the deposition of mud. They are as it were the strainers and refiners of nature; for, sometimes rising and floating on the surface, and then sinking through the water to the bottom, they involve, in their filamentous and gelatinous structures, much of the floating refuse matter which they and their allies have been unable to digest as food. Their action may be likened to that of mucilage or isinglass, put by brewers in their vats to refine the beer. And it is by these, and similar plants, that a great deal of mud is not only precipitated from water, but restrained at the bottom of streams, so that rivulets run with crystal clearness over successive strata of offal, which are thus curiously kept undisturbed." (P. 83.)

"*Geographical Distribution of the Confervales.*

"§ 210. From the more equable temperature of the medium in which they live, the range of aquatic, is often much less confined than that of terrestrial plants. Water so far diminishes the heat of the torrid, and moderates the cold of the frigid zones, that several pond and river weeds are known to flourish from the equator to the poles; for example, the European bulrush (Typha latifolia,) has been found in Siberia, North America, Jamaica, China, and the peninsula of Hindostan; our common duck-meat (Lemna minor), which spreads over the whole of Europe, is a native also of North America and Asia, being found in the waters of Pennsylvania and Carolina, as well as in those of Siberia, Tartary, Bucharia, China, Cochin-China, and Japan.

"§ 211. But, although cosmopolites occur amongst those which are usually considered much superior and more perfect plants, it is a curious fact, that these are very few of these inferior grades which seem able to endure equivalent vicissitudes of climate.

"§ 212. Confervæ are comparatively rare between the tropics, and, although not entirely confined to the temperate zones, they become gradually more abundant in the higher latitudes, both of the northern and southern hemispheres.

"§ 213. This is a circumstance deserving especial notice, and the more so, as it is one that could not have been presupposed. Speculation would have suggested that the mud of the Ganges and the Nile, the pools and tanks of Egypt and of India, which swarm with animal life, would not have been less prolific nests of the still simpler forms of plants. But the contrary appears to be the truth; for, whatever allowance may be asked for the less accurate researches that have been made in this department of natural history in extra-European countries than in our own, still the broad fact is sufficiently established: so that, of their comparative paucity in warm countries there can be no doubt.

"§ 214. Connected with the subject of the general geographical distribution of the Confervales, there is a circumstance worthy of remark, not only on its own account, but as indirectly corroborating the statements already made, which, though founded on good evidence, would have been more satisfactory had the examinations been more minute. The hint was first thrown out by Brongniart that no true Confervæ are found in warm springs. This remark has been since confirmed, and I do not know that it admits of any exception; for those Confervales which have been mentioned as inhabiting the Bath and similar thermal waters, belong to the type Oscillaceæ; a group which, it will be remembered, [vide § 181.] verge towards the animal kingdom, and which some naturalists of authority have even wished to exclude from the vegetable reign.

"§ 215. Hence it will appear that the chief geographical range of the Confervinæ, and especially of the types Confervaceæ and Ceramiaceæ, is in the temperate zones; the Confervaceæ abounding both in salt and fresh water; the Ceramiaceæ being exclusively marine.

"As the Oscillaceæ occur in hot springs, along with some of the Ulvaceæ [vide § 241, &c.] that inhabit tropical seas, it is very probable that they will be found, on further examination, to approach nearer to the equator than their allies; but of this no direct evidence has been adduced.

"§ 216. The range of the Nostochinæ appears to be much more extended than that of the Confervinæ; for Palmella, Nostoc, and their allies, are common plants in most temperate regions: while Protococcus abounds not only on the Frozen Mountains, near the North Pole, but is likewise a native of the British Isles, is met with in profusion in the Alpine districts of France, Spain, Switzerland, and Italy, and perhaps even at Paramo, in South America, nearly under the Line [§ 45.]

"§ 217. Whether this plant be indigenous to all these various latitudes, or only a visiter to some, is at present undetermined; but, as it is most permanent and abundant towards the north, and on mountains having a northern altitude, it is likely that its appearance in more southern regions, and in warmer climates, may be owing to occasional migrations.

"§ 218. Of the geographical distribution of the Fragillinæ, far too little as yet is known to allow any generalizations to be ventured; but as many of them are either parasites or epiphytes, and others, as the Globulinaceæ, are for the most part peculiar to certain fluids or solutions, it is probable that their distribution will partake more of a local than a general character; and that they will be found to be more affected by accidental circumstances, always varying, than by the physical constitution of a country, or the vicissitudes of climate." (P. 95.)

"*Geological Distribution of the Confervales.*

"§ 219. The fossil Confervæ of the ancient world appear, by their geological position, as far as it is known, to confirm, in an extraordinary and unexpected manner, the soundness of the conclusions at which naturalists had previously and unpremeditatedly arrived, as to the geographical distribution of the present existing species.

"§ 220. In the first place, they appear to have been much less common in former times than now, for in the older rocks no traces of them have been ever found, and, in the second, to have been unknown during those epochs in which the temperature of the tropics extended further towards the poles. For the vestiges discovered in the upper secondary and tertiary formations are extremely few; and no decided evidence of their existence has hitherto been adduced, even so late as the era of the coal measures, when ferns, and palms, and pines, were flourishing with the most exuberant wildness; for the filamentary productions found in the schistous deposits of the coal formations have, as Brongniart well observes, none of the characters of confervoid plants, but resemble more the impressions made by ulvaceous flags, or the aquatic rootlets of still superior vegetables.

"§ 221. The *Chalk-marl*, nearly at the summit of the secondary series, is the first stratum in which vestiges of decided confervoid plants appear; and here only two species, at most, have been found: these have been figured by Brongniart, in his "Histoire des Vegetaux Fossiles," and described under the names of *Confervites fasciculata*, and *C? Ægagropiloïdes*. The first bears a very considerable resemblance to our present species, *C. ærea* [§ 175, fig. D.], and the latter to our moor-ball, *C. ægagropila* [§ 184, fig. A.], or rather to our sea-balls, *Ægagropilæ marinæ*, which are formed by the aggregation of the leaf-fibres of Caulinia oceanica. Hence a query is affixed to its generic name; for, no articulations being perceptible, it is a very doubtful Confervites.

"§ 222. In the tertiary series another species has been discovered, [§ 221, fig. E. F.], which Brongniart calls *Confervites Thoreaformis*, from its similitude to certain species of the recent genus *Thorea; e.g.* to the T. *ramosissima* of France, or rather to the T. *violacea* brought by Bory St. Vincent from the Isle de Bourbon. Brongniart states this to be the most satisfactory example he has seen of a fossil Conferva: the specimen from which his figure was taken is preserved in the collection of the Marquis de Dré.

"§ 223. The above-named two species of Confervites are all that have been hitherto discovered and absolutely determined; hence there are not sufficient materials collected to decide how far the various sections of the Confervales could be distinguished, if found in a fossil state. Such a distinction would certainly be difficult; Brongniart thinks almost impossible; at any rate, it would be useless now to subdivide so small a group: therefore, it is agreed that all articulated filamentous fossils shall for the present be associated together, and form the genus *Confervites*, which, should a greater number hereafter be discovered, may become the common name of the fossil section, equivalent to *Confervinæ* among recent plants.

"§ 224. That further researches will enlarge the group there can be little doubt, for Brongniart mentions having examined, in a collection at Verona, various fragments of marine fossils bearing the impressions of articulated plants, apparently Confervites, of several different species. One fragment, he says, seemed, from the rounded granules towards the ends of the filaments, to bear the impression of a plant similar to some of our modern *Ceramiaceæ*. and several others which were in too imperfect a state to be specifically described, he considered to be associates of the various genera of the same type." (P. 97.)

"§ 225. Thus the species of this order, which, by their fossil remains, have been decidedly recognised as denizens of the ancient world, are but two, and, even including the doubtful and undetermined markings, the amount still remains very small. So that, either all vestiges of these plants, if they were formerly as abundant as they are now, must have been wiped out, which there is no reason for supposing, or the physical condition of this planet must formerly not have needed the services they now perform; or have been at one time incompatible with their existence, and at another unfavourable to their increase.

"§ 228. Thus the geographical and geological distribution of the Confervales curiously coincide, and the facts collected on either hand as curiously confirm each other. For, as in our own time, these plants abound in temperate regions, and are unknown, or few, in warmer latitudes, so likewise in former eras, when, from other evidence, it is believed that the temperature of this globe was higher than at present, geological researches affirm that they were, in like manner, either absent, or as scantily produced.

"§ 229. Thus is the first link of an astounding chain of testimony secured; for, from the beginning, there were natural witnesses of Nature's works, and natural records kept; and these humble plants will perhaps afford one of those scattered sybil leaves, which, if rightly arranged, may unfold, in part, the ancient history of the world." (P. 99.)

The *Fucales* we pass wholly without extract, as we cannot afford more room than for a short notice of some of the *Lichenales* found on the officinal barks.

"§ 384. Until the publication of Fee's Memoir on the Cryptogamic Epiphytes of the Officinal Barks, the study of the opegraphas and their allies seemed to be one rather of speculative amusement than of practical utility. But now the case is wholly changed, since these graphic plants, these living letters written by Nature's hand, are shewn to constitute inscriptions legible by men. Always curious indeed, and admirable, even to the least tutored eye, did the examination of these mimic characters appear; and as fancy traced the likeness to various oriental signs, so were these little plants called scripture-worts, some Hebrew (Opegrapha hebraica), some Chinese (Arthonia sinensigrapha), and so forth. But, like the hieroglyphics of the Egyptian fanes, their meaning was buried in obscurity, and so little guessed at, that it often was doubted whether they had any secrets to reveal. They were sources of wonder rather than of wisdom, until the Young and the Champollion of the vegetable world arose, and by means of a natural Rosetta-stone deciphered these hitherto unknown manuscripts, and taught us to peruse this part of the sacred Scriptures of creation." (P. 158.)

"§ 391. *Chiodecton*, the snow-wart, so called from χιὼν and δεκτικος, the tubercles being seated on a thallus, white like drifted snow, promises to become an important diagnostic sign of the bark of the Cinchona cordifolia, to which one species (C. effusum?) is said by Fee to be peculiar.

"§ 392. *Pertusaria*, the porelet, (from *pertusus*, perforated,) and ts ally, *Thelotrema*, (from θηλη, a nipple, and τρῆμα, a hole,) are further illustrations of this subtype. They are chiefly interesting as affording two further distinctive signs of officinal barks, the latter, (T. urceolare, of the Cinchona oblongifolia, or red bark), the former in that variety of *P. communis* called amara, (*Variolaria amara* of some writers,) of the inferior value of the barks on which it is found. According to Fee, this lichen chiefly grows on the very old bark of Cinchona cordifolia, and denotes by its presence a bad quality. *Variolaria amara* is itself, as its name imports, extremely bitter; and as it is very abundant in many districts, it ought, as the same lichenologist observes, to have its medicinal properties ascertained, for, probably, it might be employed with advantage in certain diseases; it readily imparts its intense bitterness both to water and spirit." (P. 160.)

"§ 396. *Verrucaria* and its allies, forming the small subtype *Verrucaridæ*, chiefly differ from the Endocarpidæ, to which, with the exception of their proper excipuli, they are very similar, by the non-dehiscence of the apothecia, and the nucleus being deliquescent. The species, both European and exotic, are very numerous, and a great many are epiphytic on the officinal barks, but in this respect they are such cosmopolites that they do not afford any very decided differential signs, or at least the distinctions have not as yet been sufficiently made out. One species of *Ascidium*, which grows commonly on several of the officinal barks, may be given as an illustration.

"But although these and many other epiphytic lichens do not each indicate specific plants, their general presence or absence will often assist in discriminating otherwise nearly similar vegetable productions. For example, it has been already mentioned [§ 365,] that the beech, though not absolutely destitute of lichens, is far less licheniferous than the oak, the ash, the hawthorn, or the fir; and in like manner it has been found that the spurious angustura bark, which is obtained from a species of *Brucea* (B. antidysenterica,) and which contains a poisonous principle analogous in its properties to *Strychnia*, bears very few lichens of any kind; while the true *Cusparia febrifuga*, which is an admirable tonic, bears them in abundance." (P. 162.)

"§ 401. *Rhizomorphaceæ*. The *Rootmoss*, (Rhizomorpha,) so called from the radiciform elongations of its thallus, gives name to the *Rhizomorphaceæ*, the first type in the section *Byssinæ*.

"§ 402. The several species of the genus *Rhizomorpha*, such as *subcorticalis*, *divergens*, *subterranea*, *phosphorea*, &c., are very common on the trunks of dead trees, especially beneath the bark of firs; in cellars, particularly wine-cellars, among the saw-dust; in lead and coal mines, and other similar situations; thus shewing, by their vegetating in the dark, their secession from the normal lichens.

"§ 403. These plants are active agents in decorticating dead trees, and assisting in the disintegration of lifeless organic bodies, which would otherwise encumber the surface of the earth, and be exceedingly tedious in their removal. Portions of bark several feet in length, or even extending from the base to the bole of a large tree, will, when the Rhizomorphæ locate themselves between them and the wood, soon become so far loosened as either to fall off spontaneously, or to be unable to resist the slightest external force; and trees thus debarked are quickly preyed upon by fungi, and other wood-destroying plants and animals.

"§ 404. Several species, especially *subcorticalis*, *subterranea*, and *phosphorea*, are occasionally phosphorescent, and more or less luminous in the dark; and hence they often give to the cellars and mines in which they grow an extraordinary and brilliant appearance. In the coal-mines in the vicinity of Dresden they are said to be so abundant and so luminous, as even to dazzle the eye by the brilliant light that they afford. This light is increased by the warmth of the mines; so that, hanging in festoons and pendents from the roofs of the various excavations, twisting round the pillars, and covering the walls, they are said, by their brightness, to give to the Dresden coal-mines just mentioned, in which they abound, the semblance of an enchanted palace. Mr. Erdman, the commissioner of mines, thus describes the appearance of the Rhizomorphæ in one he visited: "I saw the luminous plants here in wonderful beauty; the impression produced by the spectacle I shall never forget. It appeared, on descending into the mine, as if we were entering into an enchanted castle. The abundance of these plants was so great, that the roof, and the walls, and the pillars were entirely covered with them, and the beautiful light they cast around almost dazzled the eye. The light they give out is like faint moonshine, so that two persons near each other could readily distinguish their bodies. The lights appear to be most considerable when the temperature of the mines is comparatively high."

"§ 405. The type Rhizomorphaceæ, characterised by having the sporidia internal, includes, according to Fries, two subtypes, in the first of which the sporidia are contained within a pseudoperithecium, formed by the collocation of the turgid fibres of the thallus. The thallus likewise, in this subtype, is continuous, radiciform, of a dark colour verging to black, and formed of many filaments blended into a common stratum. Rhizomorpha is the normal genus, and hence it is called the Rhizomorphidæ. Ascophora seems a doubtful ally, although by Fries referred to this group.

"§ 406. The Rhizomorpha cinchonarum is a rare species, but, whenever found, it is a sufficient indication of the worthless state of the barks it grows upon, demonstrating by its presence that their medicinal qualities are much impaired, if not entirely cancelled by putrescency." (P. 163.)

Outlines of the Course of Lectures on Military Surgery, delivered in the University of Edinburgh. By Sir GEORGE BALLINGALL, M.D., F.R.S,E., Regius Professor of Military Surgery, Fellow of the Royal College of Surgeons; Surgeon Extraordinary to the King; one of the Surgeons to the Royal Infirmary, &c.—8vo. pp. 589. Black, Edinburgh; Longman and Co., London.

THE course of lectures on Military Surgery, of which we have in this volume the "Outlines," deserve the especial attention of surgical students who are destined for the army, and cannot be perused without advantage by any practitioner, in whatever station he pursues his professional avocations. To the former class, of course, these lectures will be peculiarly acceptable; for, although it is true that the studies of the military and civil surgeon must be, to a great extent, pursued with the same view, yet there are many topics which the one should be acquainted with that the other may fairly pass over, and which are not discussed in the general works on the practice or science of surgery. All such subjects which appertain almost peculiarly to the duties of the military surgeon are considered by Dr. BALLINGALL: many of them, indeed, are briefly dismissed, but still upon each much interesting information is given.

In the first chapter there are many valuable hints upon the important duty of selecting and examining recruits for the army. We have often had to perform this task, and remember how very acceptable would have been to us the information given by the author. It is now, we believe, universally admitted that the strength of an army is best supplied by the recruits from the country, rather than from towns or large cities.

"This view of the matter is strongly confirmed by a statement contained in a very interesting paper on the Health of the Peninsular Army, by Sir James M'Grigor, published in the sixth volume of the Medico-Chirurgical Transactions of London: 'Of the classes of society from which soldiers are recruited, I believe it will be found that, *cæteris paribus*, tradesmen and manufacturers, particularly those from large towns, are soonest swept away by the fatigues and diseases of an army; and that those who have followed agricultural pursuits are the most healthy. Three hundred and fifty-three recruits joined the 7th regiment in Portugal, in the years 1810-11. Of these, two hundred and one were artificers and manufacturers, and one hundred and fifty-two had followed agricultural pursuits. In the course of a few months, one hundred and twenty-two of the former died, and sixty-two of the latter; the proportion being six out of ten in the former case, and four out of ten in the latter.'" (P. 31.)

In the opinions just quoted Dr. B. fully concurs.

"On the subject of stature and of bodily conformation, it may be observed that crowned heads seem, in general, to have a predilection for men of lofty stature and imposing appearance; and what are termed the household troops in this and other countries consist of men much beyond the average height; but such men frequently owe their superiority to an additional length of limbs, and are often found to have defective chests, very disproportioned to the bulk of their extremities. This renders them, particularly in our variable climate, subject to pulmonary diseases, and it has been stated to me in conversation with the surgeon of the Blues, one of the most splendid regiments in Europe, that his men are particularly liable to suffer from such complaints. Tall men are said to be more subject to diseases, particularly those of the chronic class, than men of a medium size, and they are frequently the first to fail under fatigue; men of this description therefore are not the most eligible for the general run of military duties, and 'in the present time, when the fate of battle is often decided by firearms, to which the hand of a man of six feet gives no more impulse than the hand of a man of five, it is not easy to see the reason of the rule which so generally influences the choice of those who select subjects for the formation of armies.'

"The age at which soldiers are enlisted is a point of much importance, and does not appear to have always met with that attention which it merits. Upon the principle of inuring men from an early age to those pursuits in which .they are subsequently to be employed, it is generally thought that we can scarcely enlist men too young; there is nothing, however, so mysterious in the duties of a soldier as to prevent a man, possessed of the necessary physical powers, from learning them at almost any period of life; while, on the other hand, by enlisting boys before their growth is completed, and their constitutions formed, it is quite impossible to foresee whether they will ever attain those physical powers necessary to capacitate them for the duties of a soldier; some of them will perhaps turn out better than we expect, but many of them will also, in all probability, turn out worse, and will ultimately prove a loss to the service, or what are termed in the army 'the king's hard bargains.'" (P. 32.)

The most eligible period of life for enlistment Dr. B. considers to be from twenty to twenty-five years of age. He touches but briefly on the physical defects which ought to lead to the rejection of recruits. They are specified in the printed instructions furnished to every surgeon, and their enumeration in this work is therefore the less necessary.

The diet, clothing, and exercise of troops, are subjects which demand the strict attention of the surgeon; for, although he cannot exercise an absolute control over either, it will be expected that he should furnish hints and information respecting them for the consideration of the superior officers, who rarely fail to pay a proper degree of attention to the recommendation of the medical officers upon points on which their judgment may be so advantageous to the soldiers, and of so much importance to the country. The food of a soldier may be coarse, but it should always be wholesome, nutritious, "and I should say abundant, although a distinguished military writer has dwelt upon the advantages of inuring soldiers to habits of abstinence." Dr. Jackson observes, that

"Dignity of mind and real military virtue have no connexion with sumptuous living. The conqueror is ordinarily frugal and homely; the conquered is frequently rich, luxurious, and what is called refined. It is reported of General Wolfe, who, while a man of superior goodness, was perhaps the most perfect soldier of the age in which he lived, that the cook and butler did not much engage his attention. He never gave an elegant, and rarely an eatable dinner to persons of the *haut gout;* the epicurean was disgusted, the soldier was regaled. General Wolfe's table was said to be an epitome of a Spartan messroom; no one rose from it without having been furnished with the opportunity of carrying away a military lesson, and few left it without feeling an accession of military importance communicated to the mind by the impressive influence of a hero's spirit."

One of the principal causes of the moral crime and insubordination both in the army and navy, is doubtless owing to the pernicious habit of dram-drinking. To check this mischievous habit every effort should be made, both by the officers and surgeons; and experience has shewn that, when the men become fond of tea, they are weaned from drinking strong liquors to excess.

The clothing of the soldier is a subject of much importance to their health and comfort, and does not escape the attention of the author.

"In some instances, the very mode of cleaning the soldier's clothing has been a means of inducing disease; thus the cleaning of the white trowsers with wet pipeclay, and putting them on before they are thoroughly dry, is apt to occasion rheumatic attacks, of which I have seen numerous instances. It therefore becomes the surgeon's duty, by his personal remonstrances and representations to the officers, to do everything in his power to check a practice so likely to hurt the health of his men. The use of pipeclay indeed ought strictly to be confined to the belts, gloves, and other leathern appointments, and ought not to be employed so much as it is in cleaning other parts of the dress; it is at the best (as a facetious friend of mine used very emphatically to express himself,) only putting a quantity of white dirt over a quantity of black dirt." (P. 45.)

The medical officer is not unfrequently consulted respecting the comparative advantages of different situations for the accommodation of troops in camp, in barracks, or in billets, and he should of course possess sufficient information upon the subject.

"The situation of a camp must sometimes be regulated by accidental circumstances, over which the opinion of a medical officer can have little control; but whenever a choice of the ground for encampment is submitted to professional opinion, it will be proper to recommend a dry elevated situation, remote from marshes, swamps, stagnant waters, and from the immediate neighbourhood of orchards, forests, or underwood, which are calculated to retain moisture. A camp is most advantageously situated on a gentle declivity, on a dry soil, and in the vicinity of a running stream. In order to ascertain the state of the ground, it may sometimes be necessary to dig into it to some extent; for, although apparently dry on the surface, it may be found sufficiently wet to the depth of a few feet; and if so, ought, if possible, to be changed, particularly if an encampment is to be stationary. A camp should never be formed on ground recently occupied, nor on a field of battle where much carnage has recently occurred. Many favourable spots for encampment are to be found on the banks of rivers, which perhaps, upon the whole, afford the most eligible sites. We must yet bear in mind that, when the banks of the river are low, or the country subject to periodical rains, or sudden inundations from the melting of snow on contiguous mountains, there may be a very serious danger from this cause. Against the danger of such a position we are cautioned in Mezerey's 'Médicine d'Armée,' where he states a case in which the Austrian army lost five hundred men and two hundred horses, from a sudden inundation of this kind.

"When an encampment is inevitably situated in a low or unfavourable position, the kindling of large wood fires in the windward parts of the camp is recommended by Mindererus, in his 'Medicina Militaris,' as contributing to preserve the health of the troops; and, with the same view, discharges of artillery, and bonfires in the streets, have sometimes been adopted in sickly garrisons, for the pnrpose of purifying the atmosphere; but the heat which they occasion, and the terror which they inspire, render their efficacy very questionable. Various modes of ventilating tents have been recommended, some of which are described in a little work entitled 'The Soldier's Friend,' by Mr. Blair, formerly surgeon of the Lock Hospital, in London; but, as none of these plans have ever come into general use, nor indeed have been found requisite, it is unnecessary to enlarge upon them here. The most obvious and perfect way of thoroughly airing the tents is by striking them occasionally, and exposing the straw, blankets, and soldiers' clothing to the open air; the necessity of frequently changing the straw, and enforcing cleanliness in camp in every possible way, are circumstances too obvious to require any effort of reasoning to enforce. With this view, the slaughtering of cattle, and every thing likely to create noxious or putrid effluvia, ought to be conducted without the camp, and on the side of it opposite to that from which the wind generally blows." (P. 49.)

In the construction of barracks, the two great objects to be kept in view are the means of *thorough ventilation* and *perfect cleanliness.*

"The essential part of the mode of ventilation which I would recommend, is to convert the passages, lobbies, and staircases of a barrack, or public building, into spacious air-trunks, or reservoirs, communicating directly with the external atmosphere, and supplying the rooms adjoining them on either side, both by means of the doors opening into such passages, and by means of additional apertures made for the special purpose of ventilation. Thus, at either extremity of the passages, there should be a window reaching from the ceiling to the floor of each story, the upper part capable of letting down, and the lower of lifting up, so contrived, however, as not to shut perfectly close at either top or bottom, but to leave a slit or aperture at least two inches wide, forming at all times a direct communication with the external atmosphere; and in fine weather these passage-windows may remain open to any extent, giving the most unlimited access to the external air. In the floor of each passage one or more apertures should be made of at least two feet square, covered with strong iron gratings, and in the roof a properly sheltered aperture or penthouse, so as to admit the escape of the air outwards, while it effectually prevents the entrance of snow or rain. By this direct and perfect communication of all the passages with the external atmosphere, as well as with each other, a constant supply of pure and unrespired air will exist within the building. To place the passages thus prepared in action as ventilators, there should be placed over each of the doors opening from them into the adjoining apartments, a Venetian window reaching to the ceiling, while the door itself should not reach within an inch of the floor; but the principal dependence for a uniform supply of air should rest on means independent of the ordinary openings, and may be effected in the following manner. Into each room, on a level with the floor, let apertures be made of six or eight inches diameter, and from ten to fifteen feet distant from each other, communicating with the passage or main air-trunk; and the same description and number of apertures are to be made close to the ceiling corresponding with the unbored spaces of the lower range of air-holes, it being observed that this upper row of perforations must be conducted through the exterior wall of the building, communicating directly with the external air, and so disposed as to prevent the access of rain or snow. By this means we provide for a constant supply of unrespired air from the passages or reservoirs by means of the lower range of perforations, while the respired and heated air is permitted to escape by the upper range." (P. 54.)

Dr. Ballingall states that, during a campaign, we ought not to calculate upon less than ten sick for every hundred fighting men; and this number is often fearfully increased if the army is very numerous, and much concentrated; if it is encamped on wet ground; if it has experienced great privations; and, finally, if it is discouraged by defeat, or want of confidence in its chiefs.

"An army of 100,000 men may expect, according to Vaidy's calculation, to have 10,000 sick during a campaign, independent of any rencontre with the enemy; of which number 5000 or 6000 may be medical, and the rest surgical cases; but, after a battle, the proportion will be reversed; and, under the most favorable circumstances, he calculates upon 10,000 or 12,000 wounded, in addition to the above. To this we have sometimes to add the number of wounded left in our hands by a vanquished enemy, to whom our cares are equally due. These calculations become of great importance to medical officers, particularly as they rise upwards in the gradation of ranks, and come eventually to be consulted as to the extent of the necessary establishments for the sick, or to regulate the proportion of medical staff and hospital stores to be allotted for any given service." (P. 66.)

Dr. B. makes many useful comments on the subject of military hospitals; and mentions the leading points to which the surgeon should direct his attention, when he is consulted as to their plan of construction. The best means of transporting the sick and wounded from one place to another, are also described.

The preliminary sections of the work, to which we have briefly alluded, all contain much interesting information. In those which follow, the surgical diseases of soldiers and seamen are discussed, and their nature and treatment accurately and clearly described.

"*Punishments.* There are perhaps few situations of greater professional responsibility than that in which a military surgeon is placed, when called upon to regulate the extent to which corporal punishment may be inflicted on a soldier without endangering his health or the interest of the service; without, on the one hand, weakening the ties of military discipline by undue lenity, or, on the other, sanctioning an extent of punishment which may permanently injure the individual, and thus prove a heavier infliction than the law contemplates.

"Upon such punishments as merely imply the degradation or disgrace of a soldier, it is not within my province to enlarge, and the following observations must be confined to those in which his health is involved. Many modes of punishment formerly in use in the British army are now happily abolished, and those still permitted are specifically described; so that there is little chance of those cruelties being revived which have sometimes been practised, even in recent times, by arbitrary and capricious individuals, when serving upon distant foreign stations, removed from the surveillance of their superiors, or the salutary control of public opinion." (P. 518.)

Flogging is now greatly restricted. A regimental court-martial can inflict only two hundred lashes; a circumstance which relieves the surgeon from much irksome duty, and heavy responsibility; but, as the regulations of the service still provide for the corporal punishment of offenders, they also enforce the attendance of the surgeon, to see that it shall not be carried to excess.

"In this climate, soldiers are generally able to bear the limited number of lashes to which the sentence of regimental courts-martial has latterly been restricted, but on foreign stations, men's constitutions are sometimes brought into a state in which even a hundred lashes may prove most seriously hurtful. The formidable ulcers formerly noticed as prevalent upon some of the East India stations are liable to supervene upon punishments, and I have now before me some remarkable cases of this kind which occurred amongst soldiers who had served on the western coast of Africa. In all climates, it should be recollected, that those individuals who are most likely to render themselves amenable to corporal punishment, are very frequently the least able to bear it; and this applies equally to those whose vital powers may be temporarily impaired by an occasional debauch, and to those whose constitutions may be more seriously and permanently injured by a long continued course of dissipation in early life, and by the remorse and broken spirit under which they are sometimes brought to punishment. This applies particularly to those wretched individuals, the profligate irreclaimable sons of gentlemen, who, after having spent their patrimony, offended their friends, and estranged themselves from society, enlist in the army. Of the unfavorable state of such subjects for military punishments, I shall never forget a remarkable instance which occurred to myself at the very commencement of my service as an army surgeon. The patient was a near relative of a wealthy Jew merchant; he had dissipated his patrimony, subsequently enlisted, and then deserted; he was overtaken before he had got many miles from the garrison, was brought back a prisoner, instantly tried by a garrison court-martial, and was punished with more than usual solemnity, by the tap of the drum. Although this individual did not receive what at that time was considered a severe punishment, yet 'he never looked up after it,' but was taken into hospital in a state of great mental and bodily depression, his appetite failed, and he became much emaciated; although, fortunately for the credit of the surgeon, his back cicatrized, yet he was seized with dysenteric symptoms, and in a few weeks died. To add to the melancholy catastrophe, this man's brother came posting into the barrack-square with an order for his discharge, the very morning on which he was buried." (P. 522.)

"There are two modifications of corporal punishment employed in the navy, which naturally add much to its severity; in what is termed *flogging round the fleet*, the culprit is conveyed in a boat, with certain ceremonies, from ship to ship, receiving in succession a proportion of lashes from the boatswain's mate of each, while the respective crews are paraded to witness the infliction. In the punishment of the *gauntelope*, usually termed gantlet, the whole ship's crew is disposed in two rows, standing face to face on both sides of the deck, each man being furnished with a hard twisted cord, having several knots on it. The culprit, stripped to the waist, passes between these rows, each man being enjoined to apply the knottle to his shoulders as he moves along in slow time, preceded by the master-at-arms, who places a naked cutlas under his arm pointing backwards, by which means the delinquent is prevented from quickening his pace, and evading the punishment awarded him. These last-mentioned punishments are only inflicted for very heinous crimes; they are of a most severe and protracted nature; men occasionally fall down insensible under them, and they demand the most anxious attention from the medical officer whose distressing duty it may be to superintend them." (P. 525.)

The common method of dressing the backs of punished men in this country is with a solution of acetate of lead, applied by means of a cloth, or piece of lint, soaked in it; and, under this application, the swelling and ecchymosis consequent upon the injury for the most part subside rapidly, and the part speedily heals. It is difficult to determine the number of lashes a man may receive without endangering his life, but it is mentioned by Dr. B., as a remarkable fact, that, in cases where death has occurred, it has generally been from punishments of limited extent.

The volume concludes with an account of the diseases of troops on foreign stations.

REPORTS

FROM HOSPITALS AND MEDICAL INSTITUTIONS.

FACTORY LABOUR.

On Factory Labour. By JOHN MALYN, Esq. [Read before the Westminster Medical Society.]

IN the early part of the season,* I directed your attention to the subject of Factory Labour. In addition to its importance, it had then the attraction of novelty, and, although the members concurred in my views, yet the Society was induced to adopt a proposition, that, as it was a question in which the well-being of many thousands was concerned, it should be submitted to further consideration.

Many circumstances contributed to frustrate my intention of complying immediately with your wish, and, before they had ceased to operate, the Report of the Factories' Labour Regulation Bill Committee was published.

The appearance of that Report seemed to determine the question. No diversity of opinion appeared to exist. Scarcely was there a voice heard on the matter, but it was raised in reproval of a system which smites the innocent and the young, which mars the structure and deforms the mind of youth, which uproots the best interests of man, annihilates his domestic happiness, and severs his socialities.

In the midst of such unanimity of opinion, it appeared to me to be useless to moot a subject about which there was no dispute, and on which all classes of men had made up their minds.

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* Vide No. 80 (N.S.), p. 109, of the present volume.

The case is changed; after all this toil and anxiety to establish the justice of their cause, the benevolent individuals who have laboured for the young are driven back to their proofs. A recent decision of the House of Commons has sent it forth to the world, that the members of that house still doubt whether it is injurious to childhood to be employed from morning until night as factory people are employed; and they who frequently complain of the fatigue of their own labours, have actually appointed a commission to ascertain whether a child cannot *stand* more than ten hours a-day in an elevated temperature, and breathing a pernicious atmosphere. Be it therefore our task to examine the reasonableness of their doubt.

In a subject of this nature, it is expedient that the point for which we contend should be clearly stated, and separated from those accidental bearings which, to a properly-constituted mind, are at most but of secondary importance.

It is the more necessary to do this, since those who are opposed to a restriction of the hours of labour have always evaded the real question, and have adverted only to the probable operation of such a measure upon trade; but with arguments of this description we can have no concern. Interests which have been created by, and which are founded on, an abuse, can surely prefer no substantial claim to consideration.

Assuming, then, that this globe was destined for the reception of active and efficient beings, who, though designed for labour, should labour in comfort, and to whose health indeed the exercise should contribute, I take it that the most honest end we can propose to ourselves is, to ascertain generally whether man, in his full formation, is endued with powers to resist the universally-admitted circumstances under which factory labour is pursued, and particularly whether it can be reconciled with the known laws of the animal economy, that nature shall be enabled to develop the human body, when submitted to its influence during the period of growth.

To resolve these points satisfactorily, it is necessary that we correctly understand each other when we speak of the fitness of the body for labour, and of the capacity of the body for labour. We may then proceed with our inquiry into the effects of moral and physical agents, as they promote, preserve, or depreciate this fitness and this capacity.

The condition in which the organized structure is fitted for labour is that in which the different parts of our complicated machine have attained their growth, and are in harmonious consent each with the whole, not one more than another being predominant in the mind. The mass of matter of which the body is formed is an aggregation of instruments of two kinds; one, by means of which the mind is made manifest, and relation to the rest of the species secured; and the other is to provide for the sustentation of the former. Both these orders are combined and formed into a whole by the termination, at a common centre, of the nervous filaments which pervade all parts, however distant, or however minute.

An identity of sensation, apart from all considerations of matter, is thus produced; and it is only when the attention is purposely directed to the different organs, or when they act in obedience to the will, that the mind is conscious of their existence as parts.

This, and this only, is the state of health, and the condition, in which the body is fitted for labour. Whatever occupations may be pursued, whatever agents the system may be exposed to, so long as this unity of formation is preserved, so long as the subject has it not obtruded on him that he has an arm, or a leg, or a head, or anything else, thus long may that occupation, and those agents, be pronounced salutary, and such as the being was formed to follow and endure. But, whatever may destroy this singleness of sensation, whatever may cause one organ, or one group of organs, to be eternally, or even occasionally, present to the mind, is by that very effect proved to be obnoxious, and contrary to the design of nature.

A state of health, therefore, is that in which we have a consciousness of identity, unincumbered by any impression of the existence of organized instruments. Thus we have an unerring criterion of the "fitness of the body for labour." This state of physical excellence is relative to another condition, and is therefore variable in its degree of perfection; for two given bodies may each be fitted for labour, and at the same time may differ widely in the extent of their respective capacities. Indeed, capacity and fitness go hand in hand, and, by their reciprocal influence, improve each other.

This capacity is dependent on a subtle principle, which we know only by its effects, but which vivifies, and renders available for the purposes of life, organs which, though perfect, would, without it, be passive. It confers activity in proportion to its abundance, and is itself consumed by the action it originates, and that too with a rapidity increasing as the action is uniform and enduring. We stretch forth an arm; it is a simple action, and for a short period may be easily endured, but, if we maintain that arm in such a position somewhat longer, it will so drain the principle of which we are speaking, that languor, indicative of its exhaustion, will quickly supervene; and were we, nevertheless, to push our efforts still further, universal prostration would ensue. The nervous system being the medium of its transmission, we may at once comprehend how it is that the action of a single muscle can produce this general effect.

It is not therefore the amount of action, when properly and universally distributed, that consumes this principle, so much as its localization and continuance. It is not voluntary muscular action alone which effects its exhaustion, but it is action of every kind; for, whether it be of the mind or of the body, of the organs of life or of the organs of relation, the result will be the same.

This principle is regenerated by rest, which rest must be proportioned to its previous consumption. The natural action, which provides for the maintenance of the body, of itself abstracts it so far as to induce periodic sleep, that it may then reaccumulate; and as, in the common labours of life, there is superadded voluntary action, there must be a more speedy exhaustion, and, consequently, a necessity for more frequent rest. Thus the custom of society has divided the day in such a manner that, by refreshment and rest, the patient may reacquire that principle of excitability on which his efficiency depends. This applies to the repose of the general system; but we must remember that there is a local regeneration of excitability, produced by the temporary quiescence of the employed muscles, by means of which the general exhaustion is more gradual, and is longer deferred.

These considerations teach us—

That the maintenance of one position, or the performance of one act, for a given period, will consume the excitability more than a variety of postures, or diversified employments, will in twice that time;

That rest of longer duration, and of more frequent occurrence, will be necessary for its reaccumulation in the former than in the latter case;

That action of the organs of the mind, and action of the organs of locomotion, cannot proceed as efficiently together, or to the same extent, as either of them separately;

That action of either of these two sets of organs is incompatible with vivid action of the organs of life;

That when the periods of repose do not correspond, in number and duration, to the extent of the exhaustion, an atonic state of body will be produced.

A general observation of natural employments will instruct us that these considerations are kept in view. The motions of the labourer are strikingly varied, and, in a very short period, almost every muscle in the body is, in its turn, stimulated into action. In the midst of this general activity there is, however, individual quiescence sufficient to admit of the recovery of a certain degree of power; and these alternations proceed until the combined exertion shall have gone so far as to have sensibly reduced the excitability. This marks the period for the reception of food, and the repose in which the labourer indulges, (as we see in the fields, and even in the streets,) facilitates its appropriation, and admits of a considerable restoration of his energy. He resumes his labour until the same state is again induced, when it is again similarly surmounted. A few of these periods reduce the powers so far that a longer interval of rest is demanded, and nature has bequeathed it to the whole creation during the hours of night.

The purity of the atmosphere they respire, as well as the quick transmission of the blood to the heart and lungs, by reason of the varied action of the muscles, eminently tends to maintain and increase the integrity of the body. We see, on the other hand, where a life of restricted exertion is pursued, where the activity of the same set of muscles is preserved, not only is the tone of these muscles affected, but that of the whole body considerably diminished, its condition impaired, and its dissolution anticipated. In many trades which the artificial state of society has called into existence, this fact is strongly exemplified. True, it does not strike a casual observer with much force; for, from his youth upwards, he has been familiarized to the sight, and there is nothing unnatural to him in the appearance. Milliners, tailors, shoemakers, and many others of like occupations, will feelingly describe the agony which embitters the early years of their introduction to labour, and the relief, the joy, which they experience from a temporary change of employment. But I hear it alleged, in the common formula of speech, that "use is second nature, and that they become familiarized to the pursuit." They do indeed! but at what expense, is testified by the records of our hospitals, and the experience of our profession. They do indeed! but it is as the overstrung bow preserves its form when its elasticity is lost, that they retain the outward characters of their species after they have lost the resistency both of body and of mind. The evils which beset them lurk beneath the surface, and do not, by their prominency, warn them of their danger. Torpidity succeeds this unnatural excitement, and the sense of suffering ceases. Day glides after day, and they are conscious of no change as time advances; nor can they, but by contrasting distant periods, appreciate the alteration they have sustained. It originated they know neither how nor when; yet this they know, that their life is but a life of endurance, for which the world offers but few charms, and death scarcely any terrors.

Here then we may view some of the lights and shades of a labourer's life. Here we may see the means whereby health is preserved, and labour lightened; and here we may contemplate the awful penalties of an interference with the laws of nature.

We might now proceed to inquire how far the circumstances of factory labour correspond with the necessities of man. It is essential, however, to notice previously the peculiarities of childhood, since it is to that state our investigation principally refers. These peculiarities will demonstrate, with an irresistible emphasis, that the labour of a factory-child is the labour of death, and that misery is its inevitable portion.

A momentary glance at the common term of life suggests a division of it into three stages. In the first, the instruments of the body are developed, augmented, and gradually matured; in the second, the organization is complete, and its fitness for labour established; the third is the period of decline.

In the first, the plastic or formative period, we discover no provision for laborious pursuits, but, on the contrary, we find a condition of parts which strictly forbids them. Everything is here incomplete: the bones, designed for strength to the limbs, are not consolidated; the muscles, by which they are moved, have not acquired their power. It is the period of nature's exertion, in which she is vigorously employed in building up the human fabric, and in manufacturing implements for the future use of the subject. Here there is much work to be done, many changes to take place, and much matter to be prepared and deposited in the body, as well for its sustentation as for its growth. The organs employed in the preparation and transmission of this material are necessarily in vivid action, an action which, if it occurred in the second stage of life, would be termed inflammatory. To answer such excessive demands, repeated exhibition of food is requisite, and means to secure its perfect assimilation required. These means are, frequent rest, (that the principle which supports functional excitement, and which this inordinate activity destroys, may be regenerated,) good air, and exercise, varied and apportioned to the age of the child.

This feverish state of growth induces a great sensibility of the surface of the body to external impressions, which requires that it should be strictly guarded from vicissitudes of temperature and of atmosphere, that the balance of action be not disturbed.

As development proceeds, and tone is established, so the degree of excitement is reduced, until, at the expiration of about a fourth of the natural term of existence, the powers of life become restricted to the simple preservation of the body, and the plastic merges into the second, or active period.

Now it is that we discover a condition of body peculiarly fitted for labour. The interior functions are tranquil, the object of their previous intensity having been accomplished; and they therefore do not make anything like the call on the principle of excitability which they did before. A great supply is consequently provided for the organs of relation and these organs; those instruments, or tools, wherewith the being is to work, are finished, and adapted to the end for which they were formed. As nature points out, in the first period, that she does not require the subject to make use of imperfect instruments, any more than we expect a carpenter to work with tools before the materials of which they are constructed have been modelled, completed, and formed into an efficient whole, so, as we look for industry to this carpenter when his instruments are perfected, does she design that all the powers of man shall be put forth in this, the second, or active period of existence.

Enduring for about twice the previous term, this is succeeded by the third, or period of decline.

The duties of the former stage fulfilled, preparations for departure commence. The powers of life are in gradual recession; the organization loses its resistency; function after function is impaired, and often lost; and the principle of excitability becomes less and less abundant, until, by its entire abstraction, the phenomena of life can no longer manifest themselves, and the whole is terminated by the condition called death.

In noticing these stages of existence, we cannot fail to be struck with the remarkable provision which has been made for each. Great internal action, to supply the demands of the first; strength and vigour for the activity of the second, and an adaptation of power to the diminished energy of the third; hence we may, by an inspection of the organization, at all times infer the duties of every age, and ascertain the degree of labour which nature requires, or can tolerate; inasmuch as the absence or imperfection of organs required for the performance of a given act, is ample evidence that she did not intend such act to be attempted by the subject at that particular period. To exact, then, from the first period of life the labours of the second, would be as unreasonable as to expect that infants should masticate before dentition, or procreate their species before sexual development.

If we turn a deaf ear to the appeal of reason, and shut our eyes to these indications, what deplorable consequences must we not anticipate, if we interfere with nature while she is so unremittingly engaged? If the intervals of rest do not correspond, in number and extent, to the internal commotion, the efficiency of the organs of life must be depreciated in proportion to the privation. If there be superadded external exertion, the excitability will be more rapidly and more effectually exhausted, the functions of life will be enfeebled, the structure vitiated, and the plastic period will be cut short, and will pass into the period of decline, without the intervention of the second.

Having glanced at the different conditions of the human body, at the peculiarities of childhood, and at the circumstances which are essential to its welfare, it remains but to inquire whether those which obtain in our factories correspond with its exigencies.

Some of the statements which have been rendered on this point are scarcely credible. Postures the most constrained and irksome to be borne, hours of exertion extended far beyond what charity can contemplate, an atmosphere palpable to the senses from its grossness, humidity saturating the clothing, an abridgment, nay, denial of periodic refreshment, and an inhuman violation of the laws of nature, in filching from the operatives that nocturnal repose which is not denied to the very beasts of the field, are recorded in burning letters of shame, as being the circumstances which, in many instances, childhood has been compelled to endure.

Such atrocities however are not, they cannot be, universal; but I grievously err, if the mildest form of factory labour, pursued under the most humane of masters, is, in any one of its circumstances, adapted to the plastic state of youth.

If we select the best examples for our consideration, we shall find that in all there is an elevated temperature, in all there is uniformity of labour, in all there is a polluted atmosphere, in all there is an undue limitation of the periods of repose.

At an early hour a child is roused to its labour, even in the winter months, and, in a state of excitement, it is exposed, for a quarter of an hour or more, to the sleet, or the rain, or the frost, but certainly to the cold. In a temperature of sixty or seventy, or eighty, or ninety degrees, for fourteen hours, (saving half an hour for the morning, an hour for the midday, and half an hour for the evening meals,) it must stand on its legs, scarcely ever moving, and occupied, during the major part of the time, in watching a number of threads in rapid progress through the machinery, that, when they break, it may seize, and combine their disunited ends. This it does in an atmosphere from which the fresh air is excluded, which has been breathed over and over again by the persons employed, which is loaded with the exhalations from reeking bodies, and which, in many instances, is charged with dust and flue. Before its duties are completed, oil or gas lights are brought into requisition; and these consume still further the vital properties of the atmosphere, and produce a greater heat. External temperature is at its lowest point; humidity, possibly, is more established; noxious exhalations, through which none but the healthy and the strong can pass unscathed, are issuing from below and descending from above, when the moment of its emancipation arrives. Through such circumstances it is that, scantily clothed, the exhausted child must pass, after leaving a tropical temperature, to seek a few hours of repose. And morning after morning, day after day, and night after night, must it run the gantlet through these deteriorating agents. And whither does it go? To a densely-peopled colony, where the houses are huddled together, and where every room, from the cellar to the garret, has many inmates. Within, these houses are all wretchedness, and destitute of a single vestige of domestic comfort; without, the state of things is more revolting. The streets, seldom paved, and, when paved, never cleansed, are the depositaries of many abominations; in them, animal and vegetable matter, in every stage of decomposition, mingles with the accumulated filth, rendering them at once offensive and nearly impassable.

Had it not been that those who are considered wise in their generation have, by their vote, shewn that they think differently, we might, in our simplicity, have fearlessly declared that it was impossible to doubt whether the growing frame could, without certain danger, thus bare its breast to the storm, or with impunity thus defy the laws of its Creator, and mock his power.

There is not in this description of labour a single circumstance which is necessary for the period of growth; there is not good air, there is not varied exercise, there are not proper intervals of rest. But there are all, and more than all, those circumstances which have been pointed out as destroying the excitability of the system, and as impeding, and even altering, the functions of life.

The labour itself, at the early age these children are consigned to it, is more than sufficient to neutralize the efforts of nature, and to prevent their attaining a robust meridian. The vital columns of flesh which tug and strain for twelve hours a-day to maintain the head on the trunk, and the trunk on the pelvis, to balance these on the thighs, to counteract the flexure of the knees, and, finally, to preserve the whole on the arches of the feet, must quiver with agony whilst they retain any healthy force.

When we carry our thoughts still further, and reflect on the incompleteness of the bones, do we not find in *their* state a direct prohibition of such employment? And must it not create a feeling of astonishment, that, numerous as are the deformities which occur, they are not yet more numerous?

What but a weak and diseased body can be formed from the product of jaded organs? What but a feeble and vitiated mind from such an unnatural consumption of energy?

The sensibility of surface, induced by the operation of heat, will subject the system, when exposed to low temperature or humidity, to all the consequences of disturbed circulation. In those who have been recently introduced to the employment, there will be great febrile excitement and local congestion. It will be different with those who have seemingly withstood its effects for sometime. They have become enfeebled, and here such tonic changes will be rare; but they yet yield to its influence, although the effects are not immediately developed. Insidious though it be, we can be in no doubt as to what really takes place, and we can readily determine that the action and collapse which attend such excitement, and such exposures, must materially affect the organs of life, and, in particular, derange that important viscus, the liver, disqualifying it for the performance of its functions, and contributing thereby, with the diminished excitability already alluded to, to produce a general torpidity of structure.

It is natural to suppose that the continued respiration of an atmosphere which is loaded with foreign matter will diminish the capacity of the lungs, and stimulate them to local action; and such, we hear on all hands, is the fact in those departments where much dust prevails. It has been particularly adverted to by Mr. Thackrah, of Leeds, who, by means of a pulmometer which he has devised, has ascertained that the lungs of those who pursue dusty occupations will not admit nearly so much air as the lungs of those who are otherwise employed.

Bearing this in mind, and reflecting on the change in the constitution of the atmosphere effected by the accumulation of so great a number of persons, the decomposition of the oil, the attrition of the machinery, and the gas lights at night, it will be apparent that the arterialization of the blood cannot be accomplished. The passive nature of the employment will also favour a languid state of circulation, by which the transit of the blood through the lungs will be less frequent than when the actions of all the muscles contribute to its propulsion. Another means, by which the energy of the body is effected, here presents itself; for, owing to this imperfect decarbonization, that which was designed to be a refreshing stream of life, carries with it a sedative principle which destroys the tone of every part within its circle.

All these causes, though differing in some of their effects, unite to impair that function which provides for the atomic changes which are constantly taking place, and an impoverished state of body ensues.

To feel surprised, then, at seeing a weak and stunted race, mere spectres of men and women, would be to acknowledge our ignorance of the operations of nature in the development of the human body; and to express astonishment at the universality of scrofula, and other affections of debility, would be to confess that we know nothing of the cause of disease.

But most of these came healthy into the world, and it has been the force of circumstances which has marred them. What will their children be? The weakness and morbid tendencies of such bodies will, to a greater or less extent, be impressed on their offspring, and beings of an inferior structure will start into existence to perform their part in life. These, treading the same steps their sires had trod before them, and exposed to the same agents to which they had been exposed, will, with their diminished capacity of resistance, more readily yield to the influence of these causes. In their turn they may, perchance, become parents, but it will be of children who will have still further declined from the standard of health, and who will be born in misery, and cradled in vice. Can we advance another step, and suppose this generation capable of continuing its species? I think not; but, granting the possibility, the produce would be a race the very incarnation of deformity and disease, unfit for any duty, and made as it were in mockery of man.

Hence we might with certainty anticipate that,' if the factories were not to be supplied from other sources than their own population, if the sister-kingdom and the agricultural districts were to be closed against them, not a century would elapse before the class would be exterminated, and the mills and the machinery left, in the midst of desolation, nothing but monuments of human ingenuity, and of want of human foresight.

There is another consideration, independent of the effect of this system on the organization, of deep interest to society at large; and, though it is not essentially connected with a medical view of the subject, it may not be amiss to notice it briefly. An attention to what has been previously advanced will shew that the circumstances of factory labour are directly opposed to the cultivation of morals. Indeed, the mere aggregation of the two sexes, to endure together any tiresome employment, is unfavorable to such a purpose; and still more unfavorable is an occupation pursued in an elevated temperature, and in a state of comparative nudity. When the young are made constant witnesses of improper behaviour and indelicate language in adults, of whom they are unavoidably imitators, the feeble barriers of virtue are soon broken down, and they initiated into vice.

But, however powerful example may be, there will be found, in the nature of their employment itself, causes which tend to demoralize them. The excessive heat by which they are surrounded effects a premature development of the animal propensities, before the mind can attain sufficient strength to coerce these passions. Even in situations where facilities are afforded for the cultivation of the mind, individuals of a superior class to these poor creatures give way to licentiousness, to overcome the torpidity which extreme heat induces, and the voluptuousness of the inhabitants of warm climates may plead a strong apology for the laxity of factory labourers.

Again, the physical effects which have been enounced as influencing the functions of the organs of life and of locomotion, extend themselves with equal force to the mind; and the organs by which it acts are laid as prostrate as the instruments of the body. Deprived of that presiding power which should regulate and balance all their proceedings, they are incapable of thinking before they act. They seek excitement of any kind, because they thereby obtain a temporary exemption from suffering. They flog the organs of their mind into something like activity, by the indulgence of ideas of a stimulating character, and by indecent gestures and conversation, as they do those of the body by drinking ardent liquors. They have not, they cannot have, from the condition of their organization, any principles to check such practices, or to make them sensible of their error. And what is the consequence? That close on the heels of this excitement follows greater torpidity, which, similarly overcome, is yet more and more increased until the system ceases to be influenced by the stimulus.

To counteract the demoralizing tendency of factory labour, it has been customary to request, and sometimes to enforce, the attendance of the children at school on Sunday.

I would not willingly impugn the efficacy of these establishments under common circumstances, but I would suggest to their well-meaning yet assuredly mistaken supporters that they are themselves violating the laws which they wish to be observed, by working on the seventh day a fagged and wearied child, by depriving him of the only opportunity he has to regain a portion of his energy, and by blotting out, though meant in kindness, the bright spots that are scattered, few and far between, in the black catalogue of his days.

Such is the view I take of this important question, and such the reasons which lead me to conclude that

Factory labour is, in all its circumstances, unfavorable to the maintenance of health, even in the middle period of life: and that

During the period of growth it is directly opposed to the development of mind, and of body, and of morals; is certain to introduce disease, and will considerably shorten life.

Should these conclusions be admitted, though towns be razed and trade annihilated, the system ought to be instantly and effectively corrected. It devolves on our profession (of which it is the proud distinction to alleviate human suffering) to chase away the doubt of the destructiveness of factory labour, which is implied in the recent appointment of a commission, as uncalled for as it will be inoperative; a commission which cannot alter or subvert the laws of nature, but which will meet deceit at every step, and falsehood at every turning. It is for us, at all times and in all societies, perseveringly to assert and distinctly to prove that factory labour is nothing but a species of *refined and protracted murder.*

Man may thus be made sensible that there is a duty of a higher order, and of a nobler character, than that of amassing wealth and building palaces—the duty of observing, in spirit and in truth, that social, that moral, that divine law, "do unto others as ye would they should do unto you."

EDINBURGH SURGICAL HOSPITAL.

Ligature of the Carotid Artery, on account of Hemorrhage from the Ear and Fauces. [*From* Mr. SYMES' *Report; Edinburgh Med. and Surg. Journal.*]

THOUGH this case was not treated in the hospital, it deserves to be related, from the unusual circumstances with which it was attended. I am indebted to Mr. CHEYNE, of Leith, for the following history of it:

William Mason, a delicate boy, nine years of age, complained, in the latter end of August 1832, of a soreness in the left fauces. This ceased in two days. About a week afterwards, viz. on the 29th August, he was seized with pain and swelling of the right fauces and smart accompanying fever. The fever left him in a day or two, but there remained a painful external swelling situated between the upper part of the larynx and the mastoid muscle. This increased gradually, extending upwards to the jaw, and finally to the tube of the external ear.

On the night of the 8th September, a discharge of pus took place from the meatus externus of the ear, and it continued till the following evening. A teacupful, probably, was the quantity altogether discharged. The latter portions were tinged with blood. Soon after the discharge of pus had ceased, the ear having been lightly bound up, the boy raised an alarm, in consequence of a flow of blood from the ear. Upon removing the bandage, it continued profuse for a short time. It then ceased. Some ounces appeared to have been lost. A compress and bandage were applied. The swelling dependent on the abscess had disappeared entirely.

13th. A fresh bleeding from the ear. Sponge introduced with compress and bandage over it. Since the 9th, (the date of the first bleeding,) a swelling has been formed between the angle of the jaw, mastoid process, and external tube of the ear; it has no pulsation.

16th. The swelling considerably increased; it now extends downwards, bordering on the larynx. On examining the mouth, a swelling is perceived like that produced by an enlarged tonsil pushing forward the anterior curtain of the palate, and insinuating itself between the jaw and lining membrane of the mouth; it is rather pale in colour, soft, and elastic. The following symptoms are present: considerable difficulty of breathing and swallowing, imperfect articulation, frequent hawking of phlegm from the throat, difficulty of closing the jaws, difficulty of lying down, very uneasy expression of the countenance, with constant watering of the eyes. The pulse of the temporal artery to be distinctly felt.

18th. In the evening he discharged suddenly from the mouth two or three ounces of florid blood. For a day or two before this the phlegm from his throat had been tinged with blood. The case appearing to be one of extreme hazard, and the object of present apprehension, hemorrhage, likely to be fatal, either by its quantity or through the vicinity of the trachea, by causing suffocation, it was suggested by Dr. Combe to tie the common carotid artery, and this operation was proposed to the parents. They, however, did not accede to it at that time. It was then agreed to request Mr. Syme's opinion on the case. Mr. S. having approved of the measure, it was again recommended (by him) to the parents, who now consented to it. The artery was then tied at the side of the larynx by Mr. Syme.

October 1st. Immediately after the operation an improvement in all respects took place, and has been gradually increasing till to-day. The operation itself gave rise to no inconvenience which would not have resulted from a simple wound of the parts. The external swelling decreased quickly, and is now gone. There still remains a slight internal swelling in the situation of the tonsil. No pulsation of the temporal artery. Since the first bleeding at the ear, there has always been an oozing from it of a thin bloody ichor.

On the evening of this day, while he was reading aloud, a profuse bleeding took place from the internal fauces, and at the same time from the ear. It soon ceased. About ten ounces were discharged in all. On examining the mouth, some clotted blood was seen adhering to the right tonsil. He had been allowed incautiously to go out of doors in the forenoon, and had run about without restraint.

2d. A tumor equal in size to the half of a hen's egg has been formed since last evening between the angle of the jaw, mastoid process, and tube of the ear. There is no increase of the swelling in the mouth.

6th. The external swelling decreased in some degree. There has been no discharge of the ichorous fluid from the ear since the 1st instant.

In the evening a fresh discharge of blood from the internal fauces and nostrils, (from one source, however, the right side of the fauces as it appeared.) It soon ceased, but not before about twenty ounces were lost. Immediately after he had syncope. In two hours he had rallied, and was asleep with a pulse at 120.

8th. In the evening, a bleeding from the fauces to the amount of eighteen ounces, followed by faintness and very small pulse.

After the 8th there was no return of bleeding, the swelling decreased, and he gradually recovered. For some time the right tonsil appeared of a dark colour.

He is now as well as before the commencement of his illness.

Wry-Neck, depending on Contraction of the Sterno-Mastoid, remedied by division of the Muscle. [*Ibid.*]

Matthew Cullen, æt. six, Dunbar, admitted November 2, 1832. The head was much inclined to the left side, and could not be elevated, owing to the rigid contraction of the left sterno-mastoid, the sternal part of which felt like a tense cord. The complaint had existed upwards of twelve months, and had resisted blisters, with other similar means of remedy. The introduction of needles having been tried without any benefit, it was thought necessary to divide the contracted part of the muscle. This was effected by entering a sharp-pointed narrow knife a little nearer the trachea than its sternal margin, about an inch above the clavicle, and then pressing the blade against the tense fibres. A sudden snap, which shook the patient's frame, was immediately perceived, and all trace of the contraction disappeared. The knife was withdrawn, and the small puncture occasioned by it in passing through the skin afforded the only perceptible indication of what had been done. No pain or other bad consequences followed, and the cure might be regarded as at once complete.

BIBLIOGRAPHICAL NOTICES.

A Manual of Pharmacy. By Wm. Thomas Brande, F.R.S. &c. *Third Edition, corrected and enlarged.* London: Renshaw and Rush.

To every medical practitioner this work must be extremely convenient, as a book of ready reference upon all pharmaceutical subjects; and we have no better authority than Mr. Brande to whose guidance the student, who has yet to acquire the elementary parts of his profession, can intrust himself. It is divided into two parts; the first comprising the articles of the materia medica, the Latin names of which are arranged in alphabetical order; the second contains the pharmaceutical preparations and compounds, as directed by the London Pharmacopœia.

The Black Death in the Fourteenth Century. From the German of J. F. C. Hecker, M.D. Translated by B. G. Babington, M.D.—12mo. pp. 205. London: Schloss.

This is a very interesting little volume. Many of the facts which the author has selected respecting the dreadful pestilence described are important and curious. Our modern historians have but slightly alluded to the visitation of this most formidable disease, although in England it raged with frightful and fatal violence.

The chief motive which induced Dr. Babington to give us a translation of Hecker's original, was a desire that the study of the causes which have produced and propagated general pestilences, and of the moral effects by which they have been propagated, the most enlarged views should be taken. Here the contagionist and non-contagionist may each find ample support for his belief in particular cases; but, in the construction of a theory sufficiently comprehensive to explain throughout the origin and dissemination of universal disease, we shall not only perceive, Dr. Babington very truly observes, the insufficiency of either doctrine, taken singly, but, after admitting the combined influence of both, shall we then find our views too narrow, and be compelled, in our endeavours to explain the facts, to acknowledge the existence of unknown powers, wholly unconnected either with communication by contact or atmospheric contamination. The perusal of this little work will instruct the medical student, and amuse the general reader.

COLLECTANEA.

PATHOLOGY.

Emphysematous Tumor of the Neck, accompanied by remarkable Phenomena. By Dr. Ollivier, of Angers. [*Archives*, March 1833.]

M. R., of a sanguine and nervous temperament, and robust constitution, and generally in good health, repaired one morning to the house of a friend on business; he sat down quietly in an armchair; and, on throwing his head back to rest it against the chair, he suddenly felt a cracking sensation, deep-seated, on the right side of the neck, accompanied by slight pain. At the same moment a tumor formed in the part about the size of two fists, producing the greatest anxiety, sickness at the stomach, and a partial loss of consciousness. The friends thought the patient was labouring under apoplexy, and were anxious to have him bled; but Mr. R. very shortly recovered his senses, and the tumor was now somewhat diminished. He took nothing but sugared water, and finding that perfect tranquillity alleviated the feeling of distress, and that the tumor in the neck gradually decreased, he remained perfectly quiet for two or three hours, and, as soon as he felt his usual calmness restored, he returned home. Dr. C. saw him at seven o'clock in the evening. When the patient arrived at home, he went to bed, and the shivering with which he was at first attacked gave place to abundant and general sweating, which he promoted by an additional quantity of covering. When Dr. C. visited him, his face was red and wet with perspiration; heaviness of the head; pulse large and full, beating eighty-eight. The neck was carefully examined where the tumor had formed; the part pointed out by the patient was the anterior and inferior part of the neck, inside the sterno-mastoidean muscle, and directly behind the right sterno-clavicular articulation. The tumefaction had disappeared, but still this side of the neck was fuller and softer than the other. On pressing very gently above the sternal extremity of the clavicle in the direction of the trachea, deep-seated pain was produced. Deglutition was not at all impeded, nor was any inconvenience sustained in moving the head in any direction. The patient complained only of an acute and circumscribed pain in the middle of the right breast, of an uncomfortable sensation of weight in the epigastrium, and a difficulty in breathing on the right side. He was much alarmed at his situation. When his confidence was somewhat restored by the friendly assurances of his physician, he entered into a minute detail of the manner in which he had been attacked. For some moments he spoke with vivacity, when he suddenly became pale, his voice faltered, and in a moment the skin of the neck was raised at the part before mentioned by a tumor about the size of an orange. He made repeated efforts to vomit; a cold sweat succeeded to the heat which had previously existed; the respiration was difficult and intermitting, and accompanied by severe pain upon the surface of the right breast and the lower part of the neck. He sat up in bed, leaning his body forwards, and declared that he felt himself to be dying; but, notwithstanding his extreme paleness and faintness, the pulse was not irregular, nor small, and beat the same number as before. This state of distress continued for several minutes, during which the countenance presented an alarming aspect. The tumor had much enlarged, and gave to the neck the appearance of those large goitres which occupy one half of the thyroid body; the skin covering the tumor retained its natural temperature.

The rapid development of the tumor, its external appearance, and its situation, explained the phenomena which had arisen, and shewed that it arose from a circumscribed emphysema, which was probably caused by a very limited rupture of the trachea. The extreme apprehension of the patient, much more than the real sensibility of the tumor, prevented Dr. C. from determining by pressure, whether there was the characteristic crepitation of an emphysematous tumor. The patient was enjoined to remain perfectly quiet and silent, in order that even a momentary acceleration of the respiration might be avoided. An anodyne was given, and a cold aromatic liniment, and a bandage, were applied to the tumor. Every endeavour was used to rally the drooping courage of the patient, who was dreadfully alarmed at the second attack. He passed a sleepless and agitated night; the friction was repeated early in the morning; and, when Dr. C. saw him the following day, the tumor had almost entirely disappeared, but there still remained an uncomfortable feeling of heaviness at the epigastrium, and pain in the chest, although these symptoms were also diminished, and gradually disappeared.

After a week's rest, Mr. R. was able to perform his usual business; and, during the succeeding four months, his health remained perfectly good.

Cases have been recorded of spontaneous emphysematous tumors, developed in consequence of violent efforts during respiration, but in the above instance no such cause existed. But, however the emphysema may originate, it manifests itself in the neighbourhood of the clavicles, and generally is productive of no serious event. In the above case, the particular symptoms that presented themselves led to the presumption that the air escaped in a very small quantity, and probably in consequence of a lateral rupture of the trachea, and that it had infiltrated itself into the cellular tissue which surrounds the pneumogastric nerve, from whence resulted a displacement, or elevation of the nerve, to which might be attributed the spasmodic phenomena which affected the stomach, as well as the troubled respiration. The severity of these symptoms was, in fact, in direct proportion to the volume of the tumor in the neck, so that they were aggravated as its volume increased, and diminished in intensity when the size of the swelling was diminished. Mr. C. is not aware that a similar case has been recorded; and certainly, whatever explanation may be offered of its nature, the fact is sufficiently interesting to attract attention.

A case recently occurred in the practice of one of the Editors, Mr. NORTH, which somewhat resembles the above. A healthy man was sitting at table, and quietly eating his dinner of roast leg of mutton. He made no sudden movement whatever, nor was any painful or laborious effort necessary in swallowing any portion of the food of which he was partaking. He himself stated that he felt suddenly, while he was eating, a slight stiffness of the jaw on the left side, but it was too trifling to induce him to pay any attention to it, or to mention it to his family, who were sitting with him. He became somewhat alarmed, however, upon being told by his son, who was next to him at table, that his face was very much swollen, and, on putting his hand to his cheek, he felt a large tumor, about the magnitude of a middle-sized orange. He still felt no pain, nor inconvenience of any kind, excepting the mental emotion that was naturally excited by so unusual and unexpected an occurrence. Mr. North was immediately sent for: he found the tumor considerably larger than it was when first perceived, and situated exactly over the angle of the upper jaw on the left side. The temperature of the part was not increased, and its colour remained quite natural. The swelling was very slightly tender on pressure, and presented to the feel all the indications of an emphysematous tumor; its margin was, however, well defined, and there was no swelling whatever of the cheek beyond the circumference of the tumor. A cold lotion of muriate of ammonia, vinegar, and water, was applied frequently during the day, and in the course of twenty-four hours all appearance of the swelling had vanished, the patient not having been incommoded by it in any way. Some stiffness of the jaw remained for several days. Mr. North confesses he cannot explain the cause which could give rise to the sudden formation of the tumor.

As an appendix to the preceding cases, the following, which occurred in the practice of the junior Editor, may be not unworthy mention. A gentleman, while blowing his nose, suddenly found the upper eyelid enlarge; and the swelling, at first trifling, and confined to the nasal side, soon increased, and extended all over the superior palpebra, which became as large as a common hen's egg. On pressure, the tumor crepitated, and was thus shewn to be decidedly emphysematous. It subsided under the use of cold applications; but it has twice returned at distant intervals, the last time being now upwards of a year ago.

PRACTICAL MEDICINE.

Belladonna given to prevent Scarlet Fever.

During an epidemic scarlatina, 120 children, from one to six years of age, took the belladonna regularly; twenty or thirty took it irregularly; from twenty-five to thirty did not take it all. Of the first number, five only were attacked with scarlatina; of the second number, eight, and of the third, eleven. Dr. H. employed a solution of two grains of extract of belladonna in an ounce of water, and he prescribed each morning as many drops as the child was years old. Of the children who died of the epidemic, not one had taken the belladonnæ.

For additional evidence upon this subject we refer to our Journal for January 1828, p. 67, and April 1831, p. 362.—Editors.

PRACTICAL SURGERY.

Danger from Wounds of large Veins. [Extract from a Paper by M. Gensoul, describing the Cases which occurred in Paris during the Disturbances in 1831. *Gaz. Méd.*, tome i. No. 43.]

An injury of the large veins is, perhaps, a more serious accident than that of the arterial trunks. Thus, an opening of the femoral vein, particularly above the commencement of the saphena, almost always gives rise to fatal hemorrhage, if the bleeding be not arrested, or to gangrene, if the vein be obliterated. M. Roux relates a case, in his work on Operative Surgery, of a military surgeon who received, in a duel, a sword-wound, which opened the femoral vein in the groin. A ligature was applied to the injured vessel, and mortification of the limb ensued. In similar circumstances, M. R. advises immediate amputation.

A case of this kind occurred at the Hôtel Dieu of Lyons, in 1820. A soldier wounded a young man in the groin with his sabre, and he fell drenched in blood. Every endeavour was used by the persons around to restrain the hemorrhage, but in vain. The patient was taken to the hospital, and soon died. It was found, upon dissection, that the external crural vein was wounded.

MATERIA MEDICA.

Lunar Caustic Blister. In the 5th vol. of the Transactions of the Medical and Physical Society of Calcutta, we find an article by J. C. Boswell, Esq. in which the lunar caustic is recommended as a substitute to cantharides for producing vesication. Mr. B. has used that remedy in pneumonia, phthisis, rheumatism, dysentery, &c. with, he says, decided utility. The blister is formed by slightly wetting the part, and then slowly drawing the stick of lunar caustic over the surface to be blistered, first longitudinally, and then across. The fluid is discharged by small punctures, in about ten hours after the application of the caustic; and no covering being used throughout, the surface becomes in two or three days sufficiently dry to admit of a second application, in the same place if necessary. Mr. B. has put on more than thirty of these blisters in the course of treating a pulmonary case, making the intervals longer as the cure proceeds.

The advantages which the nitrate of silver, applied as a blister, possesses over cantharides, according to Mr. B. appears to be that its action is more immediate, and effect more powerful; it does not affect the urinary organs, requires no dressing, is easy of application, and always available, being so easily carried about.

Mr. Twining, the intelligent secretary of the society, has appended to this paper some remarks confirmatory of the statements of Mr. Boswell. He says that he has found the caustic blisters very useful in chronic rheumatism of long duration, affecting the joints, and unattended with pyrexia, and with little or no acute local inflammation.—*American Journal of the Med. Sciences.*

GEOLOGY.

An Account of the Ascent of the Puy de Dôme; with some Reflections upon the Geological Characters of the ancient Province of Auvergne. By ALFRED S. TAYLOR, Esq.

THE Puy de Dôme is one of the loftiest mountains of central France, and will ever be celebrated in the records of philosophy, in consequence of its having been the spot where the variation in the pressure of the atmosphere was first demonstrated by experiment. It was simply by carrying a barometer to the summit of this mountain that Blaise Pascal first clearly established the truth of the theory of Galileo and Torricelli.*

There are, however, other circumstances which render this mountain interesting to the traveller. Its peculiarly symmetrical form, its volcanic nature, and its commanding position on an immense platform of lava, confer on it a degree of interest which other, and more lofty mountains, are very far from possessing in the eyes of the geologist.

On the 9th October, 1828, I left Clermont, in conjunction with a friend, for the purpose of examining the mineralogical characters of this mountain. Our path lay, at first, through a wild ravine, bounded by stupendous rocks of granite and gneiss. The granite, in many parts, is split into columnar masses of a somewhat regular form, and which, at a certain distance, take the appearance of castellated ruins. Large masses of granite are met with in a completely disintegrated state, crumbling in the fingers on very slight pressure. This change is ascribed by Dolomieu to the action of carbonic acid, which is constantly escaping through fissures in the volcanic soil; and he has fancifully named this species of decomposition the "*maladie du granite.*"

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* This important experiment was tried in the year 1648. The barometers at the foot of the mountain, prior to the ascent, stood at 28. One of them was carried to the summit, when it fell to 24.7 inches. On descending, Pascal observed that the column of mercury proportionably increased, and it finally rose to 28. The difference of pressure at the base and summit of the mountain amounted to about 3.5 inches; and, as one inch pressure within a certain limit is equivalent to 1000 feet elevation, it was proved that the summit of the mountain was 3.500 feet above its base. The ascertained height of the Puy de Dôme is 3.565 feet.

Crossing over several cornfields, we reached the foot of the mountain, and commenced our ascent by a somewhat broad, although a very rough and uneven, road. It was impossible to avoid remarking, as we traversed the forest which skirted its base, the curiously-coloured masses of rock which projected from the sides of the road. The first specimens which we collected were of a slate-blue colour, and bore the character of pure lithoid lava. Further on we collected others, which had a decidedly ochreous tint, varying from red to orange and yellow; but it was not until we had reached the point where the trees begin to disappear, that we met with specimens of pure cellular lava. The soil, at a certain depth, appeared to rest upon this substance, and the road was covered by the finely powdered volcanic dust. It is difficult to understand how an individual who has traversed this spot could come to any other conclusion than that the mineral substances around have been produced by the agency of fire. They have the stamp of their volcanic origin marked as indelibly upon them as have those masses which are hourly poured forth from the craters of Etna and Vesuvius. Indeed, on mixing some of the specimens of lava from the Puy de Dôme with others subsequently collected on Vesuvius, I have found that even experienced mineralogists have been unable to determine which was the product of the modern, and which of the ancient volcano.

We now reached an open and barren platform, where all traces of a path were lost. The weather, which had hitherto been favorable, threatened us with a storm; but still we continued our course up the side of the mountain. The prospect before us soon became singularly wild; we were placed upon a ridge of the elevation of about three thousand feet. On our right was a somewhat steep descent, and in the distance a most extensive view of the Department of Cantal, with many of the minor extinct volcanic cones bounding the horizon, and arranged in detached insulated groups. On our left, at some distance below us, was a considerable hollow, of a circular form, of great depth, and its sides clothed with the verdant grass. This is described by many, and believed by most travellers, to have been the ancient crater of the Puy de Dôme. Sheep, scattered here and there, appeared like white specks in its ample circuit, recalling forcibly to my mind the description which is left us of the crater of Vesuvius, as it appeared in the early part of the sixteenth century. Then, it is said, flocks and herds were quietly grazing amid forests and on downs, in that amphitheatre, whence torrents of volcanic matter are now periodically poured forth with such violence as to lay waste leagues of country. In the same way, the present tranquillity of this fertile province may be but the slumber of the earthquake, which ceases only to return; and a few short centuries may suffice to bring about a renewal of the work of devastation, to scatter the habitations of man, and to teach him that he is not secure from these mysterious operations of nature, although living surrounded by the fruits of industry and civilization!

The further ascent of the mountain we found to be somewhat difficult, on account of the great looseness of the soil, which seemed to be formed entirely of a black pulverulent mould, probably arising from the disintegration of lava. In the immediate neighbourhood of the spot where we had rested, we found projecting from the side of the mountain a ridge of granite, which, however, was so friable that it readily crumbled to dust on pressure. The existence of granite at the height of three thousand feet on this mountain, is a fact which I do not remember to have seen noticed by any traveller in this quarter. It appeared as if it had been formerly covered by lava, but which, in the course of time, had become decomposed and washed away.

The cold now became severe, the thermometer sinking ten degrees below the freezing-point. The clouds were carried past us with the rapidity of lightning, completely obscuring our progress; and, in the meantime, we were obliged to cling to the projecting masses of lava and granite, to prevent ourselves from being hurled by the wind to the base of the mountain. We at length, after considerable difficulty, gained the summit; but, in consequence of the extreme violence of the wind, we found it impossible to remain there: we therefore sheltered ourselves by retiring immediately below its level, and lying down on the declivity. This part of the mountain, as indeed the whole, so far as we could observe, is covered with a light thin grass, loosely adherent to the mould. There are no parts bare or exposed, except those where the granite projects beyond the symmetrical outline. The soil, when violently struck, gave a peculiar hollow sound, a circumstance which has led some to suppose that its summit forms merely a crust or coating to a hidden abyss. This, however, is a phenomenon which appears to depend upon the loose and disintegrated state of the soil.

The weather now began to clear up, and, for the first time, we obtained a glimpse of the seemingly boundless landscape before us. The scene which presented itself was wild and beautiful in the extreme. The vast mass of the Puy de Dôme lay at our feet, in an almost perpendicular wall; the supposed crater had dwindled to a mere hollow; and the forests, through which we had passed in commencing the ascent, now appeared like indistinct green-coloured patches on the dark brow of the mountain. From our shelter, as from a central point, we looked down upon the whole of the province of Auvergne. Before us lay the city of Clermont, scarcely to be distinguished, on account of its diminutive appearance. On the one hand, the windings of the Allier, then forming but a bright streak in the landscape, and taking its course northward to join the Loire; on the other, a series of volcanic cones, stretching into the department of Cantal, and passing onwards to unite with the mountains of Languedoc, among which were particularly to be distinguished the Mont D'Or and the Plomb de Cantal. It would indeed be impossible to convey in language an idea of the beauty or splendour of the scene which unfolds itself to the view from the summit of this mountain; but, to appreciate it, it is necessary that a man should travel to study nature, and not to gratify an idle or unmeaning curiosity.

The descent of the mountain, owing to our having taken an unfrequented route, we found much more difficult than the ascent; and more than once we were nearly precipitated to the base, by the deluge of loose stones and earth which are detached at each step.

Some have doubted whether Auvergne were a volcanic district or not; whether the so-called beds of lava observed in it were produced by the action of fire, or whether they resulted from a deposition by water. The indefatigable Dolomieu appears to have been the first to set the philosophical world right upon this subject; and his memorable answer to a disciple of the Wernerian school soon led to the most important investigations.* Those who visited the spot, with a few exceptions, came back satisfied that no other reasonable or satisfactory explanation of the nature of the locality could be offered.

The conoid forms of the mountains; the physical and chemical properties of the great masses of mineral matter of which they are constituted; and, lastly, the presence of sulphur, and of other substances of known volcanic nature, establish the correctness of the theory respecting their igneous origin. But one of the most striking and extraordinary proofs which can be offered, is to be seen in the Museum of the Jardin des Plantes at Paris.†

Admitting then the truth of this position, we cannot fail to be astonished at the stupendous power which, in the primitive age of the world, must have been exerted by the volcanic mountains of this part of France. The whole of the province of Auvergne may be truly said to have been raised out of the bowels of the earth, and it has, no doubt, purchased its present fertility at the expense of widely spreading desolation. Recent researches have shewn that there are no less than one hundred and fifty extinct craters scattered over its surface, of which seventy are to be met with within the space of a league and a half. These craters are now filled up, and have been for the most part converted into vineyards, or pastures; and many a cottager has built his hut on the verge of a volcanic mouth, unconscious of the foundation prepared for him by the hand of nature!

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* It is said that Dolomieu was, on one occasion, arguing with an advocate of the Neptunian hypothesis, respecting the origin of the lava of Auvergne. His opponent, who had studied geology in the closet only, and not in nature, received a reply ("allez voir") to all his ingenious arguments, which at once silenced him.

† This specimen consists of a group of sticks united together by flakes of lava. The vegetable matter appears to have been perfectly carbonised, and to have become incrusted by the lava while semifluid. It was found, not many years since, in the immediate neighbourhood of the Puy de Dôme.

Of all these volcanic cones, the Puy de Dôme is the most worthy of observation, being insulated upon a vast platform of lava, and forming a striking contrast with the minor cones in the neighbourhood. The knowledge of its present state, combined with the recollection of what it has been, a gigantic engine of volcanic power, mighty enough to produce its own stupendous mass, and to cover upwards of a hundred square leagues of the surrounding country with lava, will lead the reflecting mind to the conclusion that the resources of nature are indeed vast beyond the comprehension of man. Next to the Puy de Dôme comes the Mont D'Or, so called from the yellow colour of its lava; and, lastly, the Plomb de Cantal, which is situated in an adjoining department.

It may seem extraordinary, with such clear evidence before us of past volcanic agency, that we possess no record or tradition which can lead to a conjecture respecting the time at which these craters were in a state of eruption. It has been vaguely stated, that they were still in activity about the ninth century of the Christian era; but, if this had really been the case, it is not probable that the fathers of the church would have passed the phenomena over in silence, ready as they were, in that age of superstition and tyranny, to make use of every extraordinary natural occurrence for some specific religious or political purpose. Certainly, any such event would have found its place in history; but, by history or tradition, the statement is altogether unsupported; and hence it may be safely rejected. If a speculation might be hazarded from the appearance of the lower strata of lava, I should refer the epoch of their eruptions to a period even more remote than the Noachian deluge. Then, probably, only the centre of that which we now denominate France, rose above the waters of the ocean, as a small insulated volcanic spot, like some of those isles now met with in the Pacific and Indian Oceans. At this time, probably, the whole of Europe was below the level of the sea, the primeval summits of the Alps alone rising above its waters. Such a speculation may seem fanciful in the extreme; but there are geological data which would lead to conclusions perhaps even more wild and untenable than this. It would be idle to inquire why these volcanic mountains should have ceased their eruptions. They have performed nature's work; they have fertilized the earth, and, for centuries, have served as a nidus of vegetation; while, on the other hand, it is probable that the active volcanoes with which we are acquainted now také that share in the processes of destruction and vivification which these have taken formerly, and of which they have left such imperishable evidence!

But it may be asked, is it probable that these volcanoes will ever resume their destructive agency? Such a question can only be answered analogically; and when we reflect that Vesuvius was not believed to be a volcano up to the period of its eruption, in the reign of Titus; that there was no record of its ever having been in a state of eruption prior to that epoch, although we know, from an examination of the surrounding country, and from an inspection of the materials employed in the buildings of Pompeii, that the eruption by which that city was laid desolate was only one of a series, of which the chain was for a time broken. Clermont is now what Pompeii was in the time of the unsuspecting Romans, who little imagined that they had founded a city on the very brink of a volcano, and of materials which afforded the most irrefragable evidence of the real nature of the locality. The Auvergnois are now enjoying that security which ignorance so often entails; they have no knowledge of the nature of the district which they inhabit; and to affirm that the Puy de Dôme had formerly been a volcanic mountain, or that they owed the actual fertility of their vineyards to the disintegrated lava-beds which have poured down its sides, would be sufficient, in their eyes, to stamp the individual for a madman. Such is the state of the human mind: the most sublime truths will be for ages regarded by the majority of men as visionary subtleties, and they will only be aroused from this dream of ignorance by the practical application which may be made of them to the common affairs of life, or by the direct evidence of impending danger!

An examination of the province of Auvergne has settled the question which was formerly much disputed, relative to the source of the lava which issues from the crater of a volcano. Most of those which are at present in activity throughout the globe, and indeed the extinct craters of the Rhine, of Hungary, of Palestine, and Italy, are chiefly situated in secondary or tertiary districts, or dispersed in insulated patches on the surface of the ocean. But in central France we find the craters are placed upon a vast bed of granite, which, as is well known, is the lowest of all the strata of the earth to which the excavations of man have hitherto extended. In this fact, then, we have direct evidence that lava must issue from depths considerably below the crust of the earth; that, in short, it must proceed from a source to which it is impossible to trace it; and therefore, with respect to the manner of its production, we must yet be content to remain in ignorance!

CHEMISTRY.

Alteration of Sound in Vessels containing Carbonic Acid Gas. By ALFRED S. TAYLOR, Esq., Lecturer on Chemistry in Guy's Hospital.

IT was first remarked by CHLADNI, that when a liquid, in a state of effervescence, was poured into a glass vessel, the glass no longer gave its peculiar ringing sound when struck by a hard body, as by a piece of metal. The sound became dull and dead, but reacquired its peculiar sharpness in proportion as the effervescence ceased. This experiment may be familiarly performed on a glass of soda-water, or champagne; and it will be immediately observed, that the alteration in the sound is great in proportion to the violence of the effervescence. If the effervescence has ceased, upon restoring this by dissolving in the liquid a quantity of powdered sugar, the phenomenon will be again remarked as strikingly as before.

The explanation afforded by Dr. BREWSTER, in his interesting work on Natural Magic, appears perfectly satisfactory. "Sound," he observes, "moves with different velocities, through media of different densities; hence the wave which produces the sound will be partly reflected in passing from one medium to another, and the direction of the transmitted wave changed. Thus, in passing through such media, different portions of the wave will reach the ear at different times, and thereby destroy the sharpness and distinctness of the sound." In the instance above cited, we have the sound transmitted partly by the stratum of carbonic acid covering the surface of the liquid, and partly by the surrounding air; and, on account of the difference of density in the two media, we have so great an interruption to the uniformity and regularity of the vibrations, that the sound becomes changed in the manner already described.

During the last winter, I had occasion to apply the knowledge of this principle to a use which it may not be uninteresting to notice. Some jars, containing carbonic acid gas, prepared for a lecture, had by accident become intermixed with other jars standing on the table, and containing other gases. Some doubts arose as to which of these vessels contained carbonic acid; but the question was speedily determined by gently tapping the exterior of the jars with an iron nail, the sound emitted by the vessels containing the carbonic acid forming a most striking contrast with that given out by the others. The knowledge of this fact may not be without its use to those who are engaged in experiments on the gases.

On the Preparation of Carbonic Oxide Gas.

By A. S. TAYLOR, Esq.

THIS gas appears to have been first obtained by its discoverer, Dr. PRIESTLEY, in the distillation of charcoal with oxide of zinc; and the process for its preparation seems to have undergone but very little alteration since his time. In our most popular works on Chemistry, at least in those of HENRY and BRANDE, the directions for its preparation are extremely complex, and are unfitted for its extemporaneous production; as, for example, during a lecture. A strongly heated furnace, an earthen or iron retort, &c., with a gasometer, are, according to the processes given by these chemists, indispensably necessary to the experimentalist; whereas, in the process given below, the gas may be readily produced in a few seconds, and on the table of the laboratory or lecture-room.

A small retort is to be filled to about one third with crystals of oxalic acid. A quantity of strong sulphuric acid is then to be added, but not more than is sufficient to moisten the crystals. The heat of a spirit-lamp may now be applied, and the gas will come over abundantly, and may be collected in the ordinary way over a water-bath.

The decomposition which here takes place will be readily understood. Oxalic acid consists of carbon and oxygen, in the proportions intermediate between those of carbonic acid and carbonic oxide. The crystals contain about one half of their weight of water, and the sulphuric acid acts by taking this water, and liberating the carbon and oxygen, under the form of the two compounds mentioned.

The gas obtained in this way is, therefore, always combined with carbonic acid; but the same fact is invariably observed with regard to the gas obtained by distilling an earthy carbonate with iron filings. To procure the carbonic oxide perfectly pure, it will be necessary, in either case, to allow it to pass over a cream of lime, or through a solution of caustic potash.

In a work recently published by Dumas, I find the binoxalate of potash recommended; the salt being treated with sulphuric acid, and heated in a retort. I am not aware that this possesses any advantages over the method which is above described, and which I have been for a long time in the habit of employing; but either the one or the other must be regarded as much more commodious, and less troublesome to the experimentalist, than the processes ordinarily recommended in works upon the science.

INTELLIGENCE.

KING'S COLLEGE, LONDON.

On Saturday last, the 25th ultimo, the prizes awarded to the successful candidates in the several classes of the medical department were distributed, at a public meeting held in the large theatre, in the College. The Bishop of London presided on the occasion.

The following is a list of the students to whom prizes and certificates of honour were adjudged.

First gold medal, for general medical proficiency		Mr. T. E. Rawson.
Second ditto		— E. J. Chance.
Anatomy	Silver medal	Mr. W. T. C. Robinson.
	First certificate,	— J. Soden.
	Second ditto ...	— A. H. Talmadge.
	Third ditto......	— Galland.
Anatomical Demonstrations —	Silver medal......	Mr. John Soden.
	Certificate...	— W. T. C. Robinson.

Botany	Silver medal	Mr. W. B. Whitfield.
	First certificate,	— E. J. Chance.
	Second ditto	— H. C. Medcalfe.
Chemistry	Silver medal	Mr. James Orwill.
	First certificate,	— H. Curling.
	Second ditto	— T. E. Rawson.
	Third ditto	— H. C. Medcalfe.
Materia Medica	Silver medal	Mr. H. Holme.
	First certificate,	— T. E. Rawson.
	Second ditto	— J. F. Osborn.
Medicine	Silver medal	Mr. H. C. Medcalfe.
	First certificate,	— C. T. Carter.
	Second ditto	— T. E. Rawson.
	Third ditto	— G. Winchester.
Forensic Medicine	Certificate	Mr. E. J. Chance.
Midwifery	Silver medal	Mr. H. C. Medcalfe.
	First certificate,	— T. E. Rawson.
	Second ditto	— G. Pearse.
Surgery	Silver medal	Mr. W. Trew.
	First certificate,	— C. T. Carter.
	Second ditto	— T. E. Rawson.
	Third ditto	— A. H. Talmadge.
Mr. Leathe's prizes for regularity of conduct, and attention to religious duties		Mr. Leacock. — Atkinson.

MONTHLY LIST OF MEDICAL BOOKS.

[*Medical Works cannot be entered on this List unless a copy be sent for the purpose, the titles of Books having frequently been sent to us as published, which have not appeared for weeks, or even months, after.*]

Part XIX. The Principles and Practice of Obstetric Medicine, in a Series of Systematic Dissertations on Midwifery and on the Diseases of Women and Children. Illustrated by numerous Plates. By D. D. Davis, M.D., M.R.S.L., &c.—4to. John Taylor, London.

An Address to the Governors of the Birmingham General Hospital, on the Propriety of appointing Assistant Surgeons to that Institution. By Richard Middlemore, Member of the Royal College of Surgeons, &c.—Birmingham.

A Manual of Pharmacy. By Wm. Thomas Brande, F.R.S. &c. Third Edition, corrected and enlarged.—8vo. pp. 544. Renshaw and Rush, London.

The Analysis of Inorganic Bodies. By J. J. Berzelius. Translated from the French, by G. O. Rees.—12mo. pp. 164. Longman and Co., London.

Observations on the Testicles. By James Russell, F.R.C.S., late Regius Professor of Clinical Surgery in the University of Edinburgh, &c.—8vo. pp. 276. Longman and Co.

No. II. Hortus Medicus; or, Figures and Descriptions of the more important Plants used in Medicine, or possessed of Poisonous Qualities; with their Medical Properties, Chemical Analysis, &c. By George Graves, F.L.S. &c. and John Davie Morries, M.D. &c. —4to. Longman and Co. London.

This elegant and useful work deserves the support of the profession, and all lovers of botanical knowledge. The engravings are particularly well executed, and the descriptive text is concise and accurate.

An Inquiry into the Causes of Respiration, of the Motion of the Blood, Animal Heat, Absorption, and Muscular Motion; with Practical Inferences. By James Carson, M.D., Liverpool. Second Edition.—8vo. pp. 447. Longman and Co., London.

Considérations Pratiques sur les Névralgies de la Face. Par — Halliday, Docteur en Médecine des Facultés d'Edinbourg et de Paris.—8vo. pp. 175. A. Pinard, Paris.

APOTHECARIES' HALL.

Names of Gentlemen to each of whom the Court of Examiners have granted Certificates:

MAY 2.

Charles Allsopp Dalby, Ashby de la Zouch
Samuel Smith, Southwold
William Evans, Little Hampton
Maurice Mason, Colchester
Isaac Baruch Toogood, Bridgewater
Wm. Price Jorden, 23, Lower Belgrave street
John Dacie Jeffery, Ottery Sellary, Devon.
Wm. James Jones, Egham, Surrey
Richard Shaw, Tutbury, Stafford
Robt. Palmer Clayton, Oxford st. Manchester

MAY 9.

Edward Grayson, Liverpool

MAY 18.

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Arthur Squire, London
Edward Wells, Swaffham
James Cropper Weeks, Ramhill, Lancashire

MAY 23.

James Fisher, Wolverhampton
Walter Harsant, Earl Saham
John Hogarth Hedley, Newcastle-on-Tyne
James Haworth Knox, Exeter
John North, Brecon
Henry Peacock
Henry Taylor, Birmingham
George Wm. Wood, Billingshurst.

METEOROLOGICAL REGISTER,

By Messrs. Harris and Co., Mathematical Instrument Makers, 50, High Holborn.

	Moon.	Rain gauge.	Thermometer			Barometer.		De Luc's Hygrometer		Winds.		Atmospheric Variation.		
Apr.			9 a.m.	max.	min.	9 a.m.	10 p.m.	9 a.m.	10 p.m.	9 a.m.	10 p.m.	9 a.m.	2 p.m.	10 p.m.
20	●		48	55	46	29.88	29.90	73	68	W	NNW	rain	fine	fine
21			52	56	44	.94	.94	64	69	E	SW	fine		
22			48	59	38	.99	.98	69	69	W	N	foggy		
23			42	47	48	.98	.94	69	70	N	W			cloudy
24			55	59	43	.78	.85	72	72	ESE	ENE	cloudy		cloudy
25		.10	51	57	43	30.02	30.04	73	73	NE	NE	cloudy	cloudy	fine
26			49	60	52	.02	29.94	73	72	NNW	NW	fine	fine	fine
27	☽		56	62	47	29.82	.66	72	70	WNW	NW	showery		
28			51	58	43	.58	.47	69	68	WNW	W	cloudy		
29			52	55	43	.40	.39	68	68	WSW	W	cloudy		
30			53	59	45	.42	.48	68	67	WNW	NW			
May														
1			55	60	52	.46	.40	67	72	WSW	WNW	fine		cloudy
2			55	59	54	.30	.48	75	77	SW	SSW	showery	rain	fine
3			54	61	57	.60	.65	81	79	SW	WSW	overcast	fine	
4	○		62	68	58	.70	.80	75	76	WSW	NNW	fine		
5			65	70	52	.97	30.19	65	63	NE	SE			
6			63	66	50	30.24	.24	63	61	ESW	SSE			
7			61	65	52	.16	.01	60	62	SE	E			cloudy
8			61	67	53	29.86	29.75	65	65	ESE	SE	cloudy		fine
9			64	73	53	.60	.57	65	65	S	WSW	fine		
10			62	65	54	.75	.80	65	65	WSW	WSW	cloudy		
11	☾		61	67	57	.87	.90	65	64	WSW	SE	cloudy		
12			65	73	55	.85	.79	64	64	SW	SW	fine		
13			62	71	55	.83	.89	64	64	NW	WNW			
14			64	70	59	.97	.88	64	63	W	SSW			cloudy
15			75	80	65	.77	.70	62	58	S	S			fine
16			75	78	62	.70	.72	55	55	SW	SW			
17			76	79	61	.64	.81	56	56	SE	NNW			
18			62	68	54	30.02	30.07	56	55	NE	SE	cloudy		cloudy
19	●		58	62	54	29.94	29.96	59	75	NE	E	fine	rain	

The quantity of Rain fallen in April, was 1 inch and 22.100ths.

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ORIGINAL PAPERS.

HERNIA THROUGH THE THYROID FORAMEN.

Case of Hernia through the Thyroid Foramen.
Communicated by W. M., Esq., Surgeon.

To the Editors of the London Medical and Physical Journal.

GENTLEMEN: Should you be of my opinion, that, although those diseases which are the most common, are, in general, the most important, and demand more peculiarly the study of the medical practitioner, still that those disorders which are less frequent, although not absolutely rare, claim also no slight degree of attention, you will probably deem the following short report of a case of protrusion of the bowel through the foramen thyroideum, not wholly unworthy a place amongst the valuable records collected and preserved in the pages of the London Medical and Physical Journal.

It is not that this case presents any striking novelty, that I am induced to send you an extract of its chief points from my notes; but the conviction above expressed, that cases of seldom, though not absolutely rare occurrence, are profitably recorded; because, although ever on the alert to perceive and to balance the evidence of ordinary symptoms, occurring in ordinary cases, we are sometimes too apt to forget that nearly similar symptoms attend very dissimilar disorders; and, although well acquainted, theoretically and historically, with such cases, the probability of their occurrence in any individual instance being small, they are too often improperly left out of the calculation in practice.

A. B., a woman, sixty-five years of age, had been ailing for upwards of three years. She was habitually costive; indeed, so much so, that a week or ten days frequently passed without any evacuation from the bowels. She had been, from youth, accustomed to work much with her needle, and she attributed her indisposition to her protracted sedentary employment. Besides her dyspeptic complaints, she suffered considerably from pains in her head, and also from a numbness in her left leg, which had latterly increased. Within a few weeks of her death, she was attacked with violent spasms, which had formerly occurred only at intervals, but now they returned daily, commencing usually about nine o'clock in the evening, and lasting for several hours. It was probably during one of these spasmodic paroxysms that the gut made its escape.

On the 20th of February, I saw her for the first time, and attended her daily, with another surgeon, until her death, which took place on the 3d of March.

Costiveness being the most urgent symptom, aperients were administered by the mouth, and enemata frequently injected; but all to no purpose. The clysters speedily returned, unmixed with fæcal matter, and the stomach began to reject both food and medicines. The spasms were attempted to be relieved by the usual antispasmodic remedies, and the irritability of the stomach to be allayed by the application of a blister. A physician, who was consulted, was of opinion that a stone existed in the bladder, as she complained of great pain in the left groin, and of a frequent desire to make water. No stone, however, was felt by the sound; neither could anything unusual be detected in either inguinal region.

She died on Sunday morning, the 3d of March; and, permission being obtained from her friends, a post-mortem examination was made. The thoracic and abdominal viscera were healthy; the bladder somewhat contracted, and its parietes thicker than usual, but free from stone. On tracing the course of the intestines, it was, however, found that a small portion of the ileum had passed through the foramen thyroideum, and had formed very strong adhesions to the contiguous parts. The knuckle of intestine was so small, that it could not be expected to be discovered by external manual investigation; it had probably been long down, or at least occasionally protruded; but, during one of the violent spasmodic attacks to which the deceased was subject, a larger portion than usual descending through an aperture lessened by inflammation, it became strangulated, and caused her death.

The case was confessedly obscure, and yet, although the distinction might not have benefited the patient, I cannot but now think that materials existed for forming a more correct diagnosis, viz. the numbness of the left thigh and the pain in the groin, combined with long-continued costiveness and stercoraceous vomiting.

I remain, gentlemen, your obedient servant,

W. M., *Surgeon.*

[See some other cases of infrequent hernia, in No. 42, page 504, of this Journal.—Editors.]

THE EPIDEMIC CHOLERA.

On the Autopsy of Epidemic Cholera. By ALEXANDER TURNBULL CHRISTIE, M.D., of the Honourable East-India Company's Service; Member of the Royal Asiatic Society of Great Britain and Ireland, of the Wernerian and Royal Medical Societies of Edinburgh, &c.

IT is a prevalent opinion that no post-mortem appearances have been observed in cholera, which could enable us to infer what were the diseased actions which had existed during life, and had constituted the disease. I apprehend, however, that, in many dissections, the examination of the various important parts of the body has been very partial,* and that the nature of some of the morbid appearances has been misunderstood.

It is well known that different visitations of cholera have been characterized by the unusual prevalence, or predominance, of certain symptoms; that Europeans, from their plethoric and irritable habits, are more liable to that type of the disorder which is distinguished by pain and burning at the stomach, violent spasms, and which is sometimes ushered in by increased action; and, lastly, that the abstemious Hindoo is particularly subject to the low and most dangerous form of the malady. It is quite evident, therefore, that if any one derives his notions of the autopsy of the disease from his own observations alone, from one visitation, or from one class of patients, they are most likely to be imperfect or erroneous; and that the only method of arriving at correct views of its pathology is to examine carefully the morbid changes that have been produced by it, in all its forms, in every description of patient, and at different times and places. But it is unfortunate that medical men have often been prevented from ascertaining the morbid changes produced by the disease in the bodies of native patients, by the religious prejudices of the Hindoos and Mahometans against dissection.

I was enabled to obtain an accurate knowledge of the post-mortem appearances in native subjects, when civil-surgeon at

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* A medical friend once told me that he had opened the bodies of several subjects who had died of cholera, but that he had found no morbid appearances which could account for the disease. Upon asking him whether he had examined the mucous membranes carefully, he said that in no case had he thought of looking at any one of them. This plainly shews that the autopsy of cholera has not received that degree of attention which it deserves. We sometimes find it stated, in the relation of cases, that no morbid appearances could be detected on dissection sufficient to account for the death of the patient; but if the mucous membranes, and perhaps also other important organs, were not examined, of what use is such an observation?

Darwar, where my favourable situation, and the assistance I received for this purpose from the civil authorities, afforded me an opportunity of making numerous dissections.* I have consulted Mr. Annesley's work with much advantage, in reference to the morbid changes observed in the bodies of Europeans; have examined all the pathological details contained in the Madras and Bengal Reports, and in other works on Cholera, and can therefore confidently affirm that the following observations may be depended upon as being perfectly accurate.

Many of the morbid changes which have been described by different authors are by no means uniform, and, excepting a few connected with the mucous system, and with the state of the blood, none can be said to be invariable.

Encephalon. Great congestion in the veins and sinuses of the brain, and of its membranes, has been generally observed in post-mortem examinations in this disease. Cases have been mentioned in which the tunica arachnoidea has been found thickened, and adhering to the adjacent membranes, and in which the substance of the brain has been soft and pulpy;† and a gelatinous or serous effusion has been often observed in the ventricles and between the membranes. Traces of inflammation are said to have been seen in the brain, in the tuber annulare, or in the spinal marrow; but they could not be detected in any of the cases that have fallen under my own observation; they are not mentioned by Annesley, or in the greater number of Reports sent by medical officers to the Medical Boards, and must therefore be considered as not belonging at all to the disease, or to be of very rare occurrence. Of all these morbid appearances, venous congestion is the most frequent; but it also is sometimes wanting, many cases having been observed in which the contents of the cranium have been in every respect perfectly healthy.

Thorax. No changes of any importance have been observed in any of the serous membranes of the thorax. A good deal of venous congestion has been generally found in the lungs; and their substance has often presented a bruised, hepatised, or fleshy appearance. They have been described by some authors to have been shrunk and drawn back, as it were, to the spine; but this could not have taken place during life, but at the time only when the thorax was opened; for it is impossible to conceive that the lungs could have exerted a power sufficient to overcome the whole weight of the atmosphere, and to leave the cavity of the pleura empty; or if, on the other hand, this cavity had by any means become distended with air, suffocation must have instantly been the result. I will defer saying any thing of the state of the mucous membrane of the lungs, until I come to treat of the morbid condition of the mucous membranes generally.

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* "Dissections have been chiefly made on the bodies of European soldiers, a class of men acknowledged to be peculiarly liable in this climate to visceral disease of all kinds. Under these circumstances, dissection reports should be received with care, in reference to the general states of morbid bodies, and with the most attentive consideration of the precise import of the terms employed." —*Madras Report.*

† This appearance has not fallen under my own observation, and is probably of rare occurrence.

The large vessels leading to the heart, and the right auricle and ventricle, have almost always been found gorged with black blood, which has also, in some instances, extended to the left auricle. Here will be the proper place for describing those extraordinary changes in the blood which form one of the most important and prominent features of the disease, and which are perhaps always present in the latter stages. The following are the results of my observations on it, as drawn by venesection, by leeches, or as seen after death, in a great variety of cases. Sometimes it has been perfectly black, of the consistence of liquid honey, or forming a uniform coagulum after a few minutes' exposure to the air; and these appearances it has retained for twenty-four hours, without separating into serum and crassamentum. In some cases it has been darker than usual, has not become fluid, but has coagulated, and separated a good deal of serum. I have observed it of the usual dark colour, with red streaks; and these streaks appeared to increase in some instances as the bleeding was continued; and lastly, I have seen it quite natural, except perhaps being a little darker than usual when first drawn.* The veins of some of the internal viscera were always found distended with dark blood, the vessels at the surface being nearly empty.

Abdomen. On opening the abdomen, a peculiar offensive odour has been sometimes observed to proceed from it. Mr. Annesley says, the omentum was sometimes corrugated, or thrown to one side. The only diseased appearance which has been found in the peritoneal surface of the stomach and intestines is a blue or purplish colour, from venous congestion. A vermilion tint also sometimes occurs, and has been attributed to inflammation, but improperly, for it is evidently owing to the distention of the very minute ramifications of the veins, which, with a little attention, can be traced to the large venous trunks. There is, I believe, invariably great venous congestion in many of the abdominal viscera, but some of them are generally more affected than others: for instance, great congestion has been observed on the surface of the intestines, and at the same time none on that of the stomach; portions of the intestines are often quite free from congestion, in other instances completely discoloured by it. I have never seen any venous congestion in the urinary bladder, which is almost always contracted, and not otherwise altered in its external appearance. The stomach is very frequently distended, sometimes it is contracted. It generally happens that some portions of the intestines are thin and greatly distended with the cholera secretion, or with flatus, while other portions are very much contracted, thickened, and possessing a doughy feel. The liver is generally loaded with dark-coloured blood; but many instances occur in which it does not contain more blood than usual, and presents a perfectly healthy appearance. The following observations on the state of the bile are extracted from Mr. Annesley's work.

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* It is worthy of remark, that black-coloured blood is not peculiar to cholera. I have seen blood taken from rheumatic and dysenteric patients, in India, continue black for many hours after it was drawn.

"The gall-bladder was always distended by thick viscid bile, which was generally of a dark-green or black colour, in subjects who died before the appearance of bile in the excretions; and, although the hepatic duct was large and permeable, the mouth of the common duct was generally constricted, and seldom permitted the bile to flow into the duodenum without considerable pressure made upon the gall-bladder. In those cases which terminated fatally after an illness of long duration, and in which some reaction of the vital energies and a flow of bile into the intestines had taken place, the gall-bladder was generally empty, or contained but a small quantity of bile; and the common duct, although not always free from some degree of constriction, was generally more permeable than in the former class of cases. In a few instances the gall-bladder was quite empty, relaxed, and flabby. In almost all the cases wherein bile was observed in the excretions, and the gall-bladder was found empty on dissection, and consequently when it could be legitimately inferred that this secretion had passed into the intestines during the life of the patient, I remarked that the viscid matter usually found lining the mucous surface of the small intestines, in the former description of cases, was detached to a greater or less extent, and was either floating in the fluid contents of the large intestines, or entirely removed along with the matters which had been ejected from them."

The spleen was generally gorged with black blood, and its texture was often soft and loose. In one remarkable case,* however, which came under my own observation, it was soft, flabby, and *did not contain a drop of blood.*

No morbid appearances have been noticed in the kidneys or pancreas.

I will now proceed to describe the morbid appearances which have been observed in the mucous membranes, which, from their constancy and great extent, must be considered as the most important connected with this disease. These membranes had an unnatural whiteness; were frequently soft and pulpy; and in general, especially in the stomach and intestines, could be easily detached by scraping from the subjacent coat. In some situations, a whitish, opaque, viscid substance was found adhering to their surface, and was often so abundant in certain parts of the intestines as completely to fill them. The different cavities lined by mucous membranes contained more or less of a transparent or turbid serous fluid; the viscid matter already mentioned being often found intimately mixed with it, or floating in it in the form of flakes, giving rise to the different kinds of the cholera secretion already alluded to in the first chapter. These appearances were sometimes more or less partial, but some of them were generally found throughout the whole extent of the alimentary canal; they extended in many cases to the mucous membrane of the bladder and ureters; and I have observed them, in two or three instances, in the pulmonary mucous membrane.

The venous congestion already mentioned often extended to some parts of the internal surface of the stomach and intestines, which then exhibited patches or spots of blue, purple, or vermilion, according to the intensity and extent of the congestion.

It will be necessary to describe the morbid appearances observed in the different parts of the mucous membranes a little more in detail. That of the stomach was often perfectly white throughout its whole extent; a vermilion blush has been often observed at the pyloric extremity, and has been referred to inflammation, but which has been more probably owing to venous congestion. Purple patches on the internal surface of the stomach were not uncommon, and when the congestion had proceeded to a great extent, it gave rise to an appearance of ecchymosis. Calomel has often been found adhering to the inner coat of the stomach, and surrounded with a ring of a reddish colour. The contents of the stomach varied very much in their appearance, from the mixture of the medicines given to the patient with the cholera secretion; and food has sometimes been found along with them when the case has been rapid, and the vomiting trifling.

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* Yella's case, in the Appendix.

The mucous coat of the small intestines, like that of the stomach, was always found unusually white, excepting when discoloured by congestion; it was thickened where the gut was contracted, thinner than usual where the gut was distended, and was always soft, sometimes pulpy, and easily detached. In many works on cholera, a considerable degree of congestion of a blue, purple, or vermilion colour is mentioned as of very common occurrence, on the inner surface of the small intestines; but in my own practice it has been more frequently absent than present. There was often a very large quantity of the cholera secretion in this part of the alimentary canal, and a great abundance of the white viscid matter adhering to the villous coat. "When the disease was of longer continuance (says Mr. Annesley), and more particularly when some reaction of the powers of the system had taken place, this viscid appearance was detached to a greater or less extent, and was floating in the fluid contents of the small and large intestines; and the mucous coat then seemed more vascular, and the arterial capillaries more injected, than in the former class of cases.[*]"

Nearly the same observations apply to the large as to the small intestines; they were sometimes contracted, sometimes much distended, and their mucous membrane was either white, or more or less deeply coloured by venous congestion.

Worms, especially the lumbricus teres, have been found in the intestines after death, in a large proportion of cases, and have been often passed by vomiting and stool; and I think it highly probable that the peculiar condition of the gastro-enteric mucous membrane, which is favourable to the existence of these animals, may act as a predisposing cause of the disease.

The urinary bladder was always contracted, never containing any urine, but frequently a considerable quantity of the cholera secretion. Its mucous membrane, and also that of the ureters, was invariably white, and sometimes covered with a white viscid substance, similar to that in the alimentary canal.[†]

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[*] Cases which had proved suddenly fatal.

[†] It has been observed by Bichat, that the various epidemic catarrhs described by authors have been generally characterized by the disorder being confined to the gastro-pulmonary membrane, the genito-urinary remaining unaffected. Cholera, however, forms an exception to this general rule; for in it the catarrhal affection frequently extends to every mucous membrane of the body.

Venous congestion is sometimes met with, but is not so common in the urinary bladder as in the different parts of the digestive tube.

For some time, believing the stomach and intestines to be the only seats of the disease, I unfortunately overlooked the condition of the pulmonary mucous membrane, and, since my attention has been directed towards the latter, I have had it in my power only two or three times to ascertain the state of that membrane by dissection. The first of the cases alluded to was that of an old man, a convict, who died of cholera after an illness of about ten hours. The symptoms were frequent watery purging, collapsed features, gradual diminution in the size of the pulse, coldness of the extremities, and difficulty of breathing. Having been attacked with the disease during the night, and not having reported his illness till the morning, the remedies came too late, and the disease proved fatal. The usual morbid appearances were found in the gastro-enteric mucous membrane, with little venous congestion in the abdomen, and no inflammation. The trachea was lined with a thickish mucus, and the minute branches of the bronchi were completely filled with a white froth. The second case being in many respects extremely interesting, and the dissection having been made with great care, in the presence of a medical friend, I will relate it in detail.

15th June, 1826. Anomah, male convict, aged twenty, was brought into hospital about half-past five P.M., from Moogud, a village five miles from Darwar.

Six P.M. It is reported that he vomited and was purged two or three times early this morning; but he himself positively asserts that he neither vomited nor was purged. When interrogated, he complains of nothing but slight pains in his limbs. His intellect is perfectly clear, and, although he is weak, he has a perfect command over all his voluntary muscles. Features considerably collapsed; pulse not perceptible at the wrist or temples; no perspiration on any part of the body; hands and feet cold; tongue coated, whitish, and moist.—Sumat statim Submur. Hydrarg. ℈i., et superbibat Tincturæ Cardamomi ℥i, in paululo aquæ tepidæ. Admoveantur sinapismi pedibus et cruribus, emplastrum epispasticum forte abdomini et arena calida brachiis.

Seven P.M. Has taken two doses of the calomel and tincture of cardamoms. Says he feels a little better. Skin colder since last report; features much collapsed. Complains of slight pains in his knees, and of pain from the cataplasms. Answers all questions most distinctly.—Sumat Submur. Hydrargyr. gr. v., necnon Tinct. Cardamom ʒiij., in paululo aquæ tepidæ quaque semihora.

Nine P.M. Has taken four doses of the calomel and tincture of cardamoms. Is restless, and complains of thirst. Pain in the umbilical region on pressure; pain in his knees continues; skin cold, with a slight cold perspiration; no pulse at the wrist or temples.—Continuantur remedia.

Ten P.M. Has coughed up a quantity of white froth; in other respects the same.

He died about midnight, and the body was examined at six o'clock on the following morning.

Abdomen. Stomach distended, with its external surface natural. Small intestines considerably distended, and of a purplish colour. Large intestines in some places distended, in others much contracted, with their external surface natural. The stomach contained a large quantity of whitish muddy fluid; its mucous coat was lined with a white coagulum, and exhibited a blush of red near the pylorus. The duodenum contained a large quantity of a white turbid serum, and a large lumbricus; its mucous coat was of a white colour, and was lined with a whitish mucus throughout its whole extent. The jejunum and ileum contained a large quantity of serous fluid, mixed with flakes of a white coagulum; their mucous membrane had a light vermilion colour, and was lined with a white coagulum. The large intestines contained a considerable quantity of turbid serous fluid. The mucous membrane of the cœcum, and greater part of the colon, had a reddish colour, and was lined with a diaphanous mucus. The lower part of the colon and rectum were healthy. The liver was healthy in its structure, with more blood than usual in its veins. The gall-bladder contained healthy and somewhat inspissated bile. The urinary bladder was healthy.

Thorax. Heart natural; blood dark-coloured. Structure of the lungs healthy. A quantity of white froth was found in the trachea. The bronchiæ were filled with a white froth, and a large quantity of grey serous fluid mixed with white flakes.

Encephalon. Considerable congestion in all the meningeal veins. All the contents of the cranium were in other respects healthy.

I will leave this case without any remarks upon it at present, as it has been related here only with the view of shewing that the catarrhal affection in cholera sometimes extends to the pulmonary membrane, as well as to the mucous membrane of the other viscera.

I have been able to gain no information on this subject from any dissections that have been already made public, except in one instance. Mr. R. H. England, assistant surgeon, in a report to the Madras Medical Board, in 1821, mentions that, "on cutting into the lungs, a grey fluid oozed from the divided places." This grey fluid could, of course, be nothing but a secretion from the mucous membrane of the air-passages and cells; and, as the remark is a general one, and not confined to any particular case, we must conclude that it was an invariable, or, at least, a very common appearance.

These instances, then, are sufficient to prove that the catarrhal affection frequently extends to the pulmonary mucous membranes, as well as to the other mucous membranes of the body.

The skin also frequently participates in the diseased action of the mucous membranes; for, in many cases, we find it covered with cold clammy sweat, or with a profuse perspiration. If, with Bichat, we view the mucous membranes and the skin merely as different portions of one continuous surface, the functions of which are analogous, we may consider the vitiated perspiration in cholera merely as the effect of the same morbid action, which in different cases extends to every part of this extensive membranous tegument, external as well as internal.

From a careful examination of the cholera secretion, procured from the stomach and intestines of several individuals who died of the disease, I found that it has the following chemical characters and composition: It does not affect litmus or turmeric papers. It becomes of a dark-grey colour when mixed with calomel. It consists of two substances; the one a transparent serous fluid, the other an opaque white coagulum. The former is perfectly soluble in cold water, which enables us easily to separate it from the latter, which is quite insoluble. This separation (which indeed often takes place spontaneously, the coagulum being frequently found diffused in the form of flakes in the serous fluid,) may be considered the first step towards the analysis of the secretion; in the same way that the coagulation and separation of the crassamentum form the first step towards ascertaining the nature of blood.

The following experiments were made on the two substances taken separately.*

I. Serous fluid.

a. Tincture of galls produced a precipitate, when added to a mixture of the serous fluid with cold water.

b. Alcohol produced a precipitate, when added to the same mixture.

c. Muriate of mercury produced a white precipitate.

d. Sulphuric acid produced a white precipitate.

e. It was coagulated by heat.

f. It did not affect litmus paper.

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* These experiments were performed two or three times with the same results.

II. Coagulated matter.

a. Insoluble in cold water.
b. Slightly soluble in boiling water.
c. Dissolved when boiled in acetic acid.
d. Dissolved by pure aqua ammoniæ.
e. Not changed when triturated with calomel.
f. Prussiate of potassa, when added to the solution *c*, produced a copious yellow precipitate.

The first set of these experiments proves that the fluid part of the secretion is pure serum, which is particularly confirmed by *d* and *e*. The second set proves that the coagulated part of the secretion is fibrin; test *f* being that which, according to Berzelius, particularly distinguishes that substance. The secretion, therefore, has a composition similar to that of blood deprived of its colouring matter; but the proportions of the serum and fibrin in the secretion are, I imagine, seldom the same as those we find in blood; for, in most cases of cholera, there is an enormous quantity of the serum thrown out by the stomach and intestines, with only a small quantity of coagulated matter.

We must conclude, from these experiments, that the cholera secretion is not merely an increased natural secretion of the mucous membranes, but that while this is increased it is also vitiated; and that it does not originate in an inverted action of the lacteals, as some have conjectured; for, independent of its being very abundant in the stomach and large intestines, where there are few or no lacteals, it has very little resemblance to chyle. The circumstance of its not affecting vegetable colours proves that there is no free acid in the secretion, and thereby shews that Dr. Ainslie's views of the disease cannot be maintained.

The turbid appearance which the serous fluid sometimes has, and the different colours which the secretion occasionally exhibits, ought not to be considered as constituting separate varieties; for, in all probability, they are owing entirely to the admixture of calomel, and other medicines given for the cure of the disease. The creamy or purulent-like matter mentioned above probably differs little from the more common cholera secretion, except in the proportion of its constituent parts. It has a perfectly homogeneous appearance. From a great portion of it not being soluble in cold water, and being precipitated from its solution in acetic acid by prussiate of potassa, it may be inferred that, like the more common secretion, it contains fibrin.

That the disordered state of the mucous membrane is not a partial occurrence, but is invariably present in cholera, is a fact that rests on the very best evidence, viz. on that of Mr. Scot, who mentions it at page 34 of his Report on the Epidemic. "We have seen," says he, "that serous membranes are not necessarily affected in cholera, but that mucous membranes, including the skin, which is of an analogous nature, are affected; and that this affection is, in some part or other, invariable." And again, he says, "The affections of the skin and mucous membranes of the body in cholera are evidenced by a cold relaxed condition of the former, and, in the latter, by the state of the stomach and intestines, from all of which a watery or mucous discharge is largely poured out; and by the state of the bladder and ureters, which are found to be coated with a mucus similar to that which is observed in the other passages. The fluid discharged at times from the bladder is almost always stated to be limpid, colourless, and in small quantity; leading to the inference that it may not be urine, but a mere watery exudation from the lining membrane. That the mucous membranes are affected is further evidenced by the moist state of the mouth, even under the most urgent thirst; and by the state of the eyes, where there appears to be a peculiar secretion, or exudation, in the form of a film."

Many cases have been recorded, in which we find it stated that, on examination, no morbid appearances could be detected. But, in these cases, were the mucous membranes carefully examined? From what has been stated in a former page, we have every reason to suspect they were not. Even if they were carefully examined, and no morbid appearances could be discovered, we are not the less certain that their *functions* were disordered during life; for of this the copious morbid secretions thrown off by vomiting and stool afford a sufficient proof. It is stated, in case 8th, in the Bengal Report on the Epidemic Cholera, that no morbid appearances could be discovered on dissection: yet, even supposing this dissection to have been made with the greatest care, it is perfectly evident that there was great functional derangement of the gastro-enteric mucous membrane during life; for the most prominent symptoms were frequent vomiting and purging.

The catarrhal affection has its seat generally, I think, in the stomach and small intestines; and in almost all severe and protracted cases, it appears to pervade every mucous membrane of the body. The stomach is certainly most obnoxious to the disease, and I have met with no case in which it was free from it. I imagine that the mucous membrane of the air-passages is not always affected; but it frequently is so, and perhaps invariably, in severe cases.

It has been already mentioned, in describing the symptoms of the disease, that cases have occasionally occurred in which catarrhal cholera has been followed by great excitement and by various symptoms of gastro-enteric inflammation. The only full account of these cases has been given by Mr. Jameson, in his Report drawn up under the superintendence of the Medical Board of Bengal, and I therefore extract the following valuable observations on the autopsy of the disease from that work: "The bodies of such as had sunk in the earlier stages of the malady frequently exhibited hardly any unhealthy appearance. This was more especially observable among Europeans of weak and sickly constitutions, and among natives of the poorer classes. On laying open the bodies of such persons, it was remarked that the abdomen emitted a peculiar offensive odour, very different from the ordinary smell of dead subjects. In them there was not the slightest mark of previous increased vascular action throughout the whole intestinal canal; which rather appeared paler than usual and flabby, and was filled with an amazing quantity of whitish or muddy fluid, or empty and inflated with air. Sometimes in the stomach this fluid was found mixed with pieces of curdled matter, or lumps of undigested food. This appearance of relaxation was not confined to those in whom the spasmodic affections were absent. It occurred frequently where the cramps of the abdominal muscles had been violent, and the pain in the stomach excruciatingly severe.

"On laying open the abdomen of such as had lived some time after the commencement of the attack, and especially of Europeans and the stouter natives, a different set of appearances was brought into view. The omentum and mass of intestines were often found displaced, and preternaturally vascular, with partial adherence between the diaphragm, liver, and surrounding viscera. The colour of the intestines varied from deep rose to a dark hue, according as the increased vascular action had been arterial or venous. In some instances the outer surface of the stomach, likewise, was florid, and its veins tinged with black blood; but this was not so in the generality of cases.

This organ was, however, much contracted, and its substance hard, and frequently thickened. On cutting into it, it was found sometimes empty, sometimes partially, and at others largely, filled with fluid of various colour and consistence, thin and transparent, milky, green, dark, grumous or muddy.

Sometimes this fluid was black, like lamp-black; sometimes it consisted of pure blood; and at other times, of blood mixed with bile. On removing this, the inner surface was frequently seen lined with coagulated lymph, bloody gelatine, or a muddy glossy viscid matter; which, on being washed away, brought the highly inflamed coats into view. Of these the appearance was various; generally they were crossed by streaks of a deep red, interspersed with spots of inflammation made up of tissues of enlarged vessels. Sometimes the inflammation was florid and bright-coloured, so as to give the whole inner surface of the organ the appearance of a minutely injected anatomical preparation. In some instances, ulceration had begun, and the villous coat was partially abraded; in others, incipient mortification had occurred, and the coats were puckered into net-work, or drawn into folds, with patches of red near the pylorus, &c.

In cases of several days' standing, the inner coat of the small guts was ulcerated, and they were filled with sanies, having portions of lymph floating in it. Then the large intestines were lined with a dark, thick, pitchy stuff poured out from the liver, as it had begun to renew its action."*

TRANSACTIONS OF THE MEDICO-BOTANICAL SOCIETY OF LONDON.

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Observations upon some of the Medical Plants mentioned by Shakspeare. Communicated by Samuel Rootsey, Esq., Corresponding Member of the Medico-Botanical Society.

Hemlock. I was lately inquiring the particular species which the Welsh call Cegyd, and was told it differed from hemlock. Hemlock, they said, grew in gardens, like parsley; but Cegyd grew in moist hedges, with a smooth spotted stalk. Shakspeare likewise speaks of hemlock as a corn-field plant, which can be no other than the Æthusa Cynapium.

> "Crown'd with rank fumiter and furrow weeds,
> With barlocks, *hemlock*, nettles, cuckow-flowers,
> Darnel, and all the idle weeds that grow
> In our sustaining corn."—*Lear*, act iv. sc. 4.

In another place he is very precise in distinguishing it from *kecksies*, by which name I have always heard the Conium maculatum distinguished in Essex.

> "Her fallow leas
> The darnel, *hemlock*, and rank fumitory
> Doth feed upon, while that the coulter rusts
> That should deracinate such savagery.

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* Bengal Report, pp. 67-69.

The even mead, that erst brought sweetly forth
The freckled cowslip, burnet, and green clover,
Wanting the scythe, all uncorrected rank
Conceives by idleness, and nothing teems
But hateful docks, rough thistles, *kecksies*, burs,
Losing both beauty and utility."—*K. Henry V.*, act v. sc. 2.

This word *kecksies* is evidently the Welsh Cegyd, and the Latin Cicuta.

It was the root of hemlock which was used as an ingredient in the poisonous cauldron of the Witches in *Macbeth*.

"The root of *hemlock* digg'd in the dark."—Act iv. sc. 1.

As the Conium maculatum is likely to be meant in this place, I think the Æthusa should be called by Withering's name of *lesser hemlock*.

The etymology of the word hemlock is obscure. I consider that the word is derived from its ill smell, and consists of the aspirate H prefixed to the radix, which in Greek is Moly, from μολυνω, to *moil*, or defile. Hence it is properly applicable to the Allium Moly, and the Ligusticum Pelopponense, which latter I suppose to have been the Concion of the Greeks.

Fumiter, or *Fumitory*. This double orthography of our poet illustrates the etymology of this word. It takes its name of Fumus terræ from its almost aerial lightsomeness and glaucous colour.

Thistle. The word thistle seems to belong to the Dipsacus, called in English Teasle, and in Latin Carduus, from its having the shape of a heart. Wool is carded and teased by means of the Dipsacus fullonum. I suppose it takes the name of Dipsacus from its thirsty nature; for in all weathers it holds between its leaves an abundance of water.

Harlock, *Charlock*, *Scharlock*, and *Scarlet*, seem to be the same word with garlick, and perhaps carrot, and originally applicable to the Sinapis arvensis, or the Allium moly, or some other plant of a more orange colour. In this neighbourhood, the name of Carlock cups is given to the Ranunculi, and perhaps the Caltha; and, after all, the Calendula may be the true plant from whence the name of scarlet is derived.

Nettles, I have no doubt, receive their name from their use as a substitute for hemp in the construction of nets, and therefore the word applies to Urtica, although in this place it may be supposed as equally applicable to Lamium, or the dead nettle.

Cuckoo-flowers. This name is applied to three genera, Cardamine, Lychnis, and Orchis. On asking a poor woman for the name of the Lychnis diocia alba, she said it was called Ladies' attire:

> "And lady-smocks, all silver white,
> And cuckoo-buds of yellow hue."—*Love's Labour Lost*, act v. sc. 2.

a name certainly preferable to that of our poet for the Cardamine pratensis, to which he evidently applies it. The orchis here is called Ganderglasses and Gandergaws, but in Essex Cuckoo-flower. The woodseer, called in the New Forest Cuckoo-spit, and which, as I was informed in Sweden, the peasants there consider as the cause of madness in cattle, abounds upon the Lychnis and the Cardamine, and seems to indicate why they should bear the name of Cuckoo-flowers. Linnæus gives to the Ragged Robin the name of Flos cuculi, which I consider to be less entitled to it than the dioica; for I believe the latter to be Shakspeare's plant. The flowers of the Cardamine are considered to be antispasmodic; but, in the New Forest, the Genista anglica is administered to children for those convulsions that accompany dentition.

The cuckoo-*buds* of the above passage must be the Caltha palustris, and may possibly be our author's cuckoo-*flowers*.

Darnel is said to be a poison which destroys the sight: its quality is narcotic, and its name I suppose to be from the same radix as the Greek δαρϑανω, *dormio*. The word ray, or in French *juray*, seems to be the Greek αιρα, and to mean poison, as *æs æris* in Latin, whence *ærugo*.

> "'Twas full of *darnel*, do you like the taste?"—*1st Part K. H. VI.* act iii. sc. 2.

Burnet, in Latin *sanguisorba*, so called from its use being chiefly confined to young females, appears to me to be equivalent to the Greek word *parthenium*, a name generally applied to another plant used as an emmenagogue.

Cowslips. The soporific principle of these flowers may perhaps reside in their freckles. The poet has pointed to it, in his *Midsummer Night's Dream*, with peculiar beauty and elegance:

> "The cowslips tall her pensioners be,
> In their gold coats spots you see;
> Those be rubies, fairy favours:
> In those freckles live their savours.
> I must go seek some dewdrops here,
> And hang a pearl in every cowslip's ear."—Act ii. sc. 1.

The agreeable odour of these flowers would indicate that the virtue, if extracted by the chemist, might combine the advantages of opium with those of saffron; and the profusion in which the plant is found renders it very deserving the attention of the physician.

Clover. This, I imagine, derives its name from its leaf being cloven: it would then have the same meaning as *clubs* at cards.

Docks. This herb may take its name from its penetrating into the ground. A *dog* may also be supposed to be named from the propensity of the terrier to *dig* into the earth. The genus Rumex, particularly the species Hydrolapathum, or Aquaticus, presents us with an excellent astringent. Its affinity to the rhubarb, and the use made of the species R. acutus, would entitle it to rank high in the materia medica. The Britannica of the ancients was our common water-dock, and I am not aware that we possess a more powerful or more eligible native astringent than this plant.

Burs. Woodville, in his Medical Botany, figures the Arctium lappa, which prefers a drier situation than the A. Bardana; the latter must therefore be considered the plant of Shakspeare. The name is doubtless of the same meaning as briar, and seems to imply that it is borne away by the passing traveller, to whose clothes the flowers or the stems strongly adhere.

Darnel. I might have remarked, under Darnel, that the Myrica gale seems to possess a similar intoxicating property, and is used sparingly for that purpose in Norway, in their drink. Being driven, by stress of weather, into Humbroe Sound, near Lillasand, I entered the house of the pilot, who had a great bunch hung up in his room. He spoke English, and, in answer to a question of mine, he informed me of its use there, and that its English name was *porse.*

Mandrake. There are two plants which are denominated Mandrake by our countrymen; they have large and forked roots. Of these, the Bryonia diocia is largest, white, and hairy; the Tamus communis is smaller, dark, and smooth. Shakspeare compares *Justice Shallow* to these roots.

> "I do remember him at Clement's Inn, like a man made after supper of a cheese-paring. When he was naked, he was for all the world like a forked radish, with a head fantastically carved upon it with a knife; he was the very genius of famine, yet lascivious as a monkey, and they called him Mandrake."
> *King Henry IV.* act iii. sc. 2.

The etymology of the word is from its root being generally divided and forked, like a man.

> "Semihominis mandragoræ flores."—*Colum.*

It is also denominated Mandragon by Gerard. The English word man exists in the Latin *humanus;* likewise in the Hebrew, and other languages. In the present instance, it is found in the Greek combined with the word *dracon*, from δερκω, *aspicio.*

Littleton supposes the word is substituted for *andragoras,* from ανηρ, *vir*, and αγορεω, *loquor*. "Quod humanam speciem quodammodo etiam vocem quum evellitur, si vera tradunt referat ejulans?" To this Shakspeare adverts:

> "And shrieks like mandrakes torn out of the earth:
> That living mortals, hearing them, run mad."—*R. & Jul.* a. iv. s. 2.

Again,

> "Would curses kill as doth the mandrake's groan,
> I'd—" *2d Part K. Henry VI.* act iii. sc. 2.

From hence it appears that the plant was believed to utter a horrible and fatal shriek when dug out of the earth.

We receive a small forked root from Chinese Tartary, the name of which is Ginseng. I have always believed that the Chinese etymology of this word was *Jin-seang*, (*vide* Morr. 8868,) Mr. Morrison, however, in No. 8803, gives it differently; and in part iii. p. 187, he gives it thus, *jin-san*, from *jin*, a man, and *san*, gradual; its slow growth being supposed, according to him, to have suggested the name. I am still of opinion that the form 8803 is rather derived from 8868, or *jin-seang*, man's likeness; and I have no doubt but it has the same meaning as the word mandrake, although the origin of the term may have been obscured by its antiquity.

Mr. Morrison illustrates the use of this root in the following paragraph, which, as it indicates its virtue, I may be pardoned for transcribing. "The true Shang-tang gin-seng may be essayed by two men walking together a few miles, one having jin-san in his mouth, and the other with his mouth empty. When he who has nothing in his mouth is panting exceedingly, the other's breath will be just as usual." This passage reminded me of Shakspeare's

> "One poor pennyworth of *sugar-candy*, to make thee long-winded."
> *King Henry IV.* act iii. sc. 3.

Thus, ginseng appears to be chewed in the celestial empire as tobacco is with us. Loureiro shews that the Canadian root, Nin-sing, is very different in quality, as well as in appearance. Galen, writing of mandrake, observes, that its virtue resides in its rind, or bark, and he considers it as cold in the highest degree. By his terms, hot and cold, we must understand the acrid and the narcotic of modern toxicologists; and those plants the temperature of which, by the old writers, was considered as of the third and fourth degree, must merit our particular attention. The plant of Galen was the Atropa mandragora, and the Circæum of Pliny, employed by Circe in her incantations. Shakspeare alludes to it when, to imply madness, he says,

> "I think you all have drank of *Circe's cup*."—*C. of Errors*, act v. sc. 1.

And again,

> "Or have we eaten of the *insane-root*,
> That takes the reason prisoner?—*Macbeth*, act i. sc. 3.

As the lurid Solanum Melongena, Melanzana, or Mala insana, *mad-apples*, is evidently named from its effect upon the brain, so the analogous root of the Atropa mandragora must be the insane-root of Shakspeare. It was also administered in the liquid form; for *Cleopatra* says,

> "Ha, ha,
> Give me to drink *mandragora*,
> That I might sleep out this great gap of time."—*Ant. & Cl.* a. i. sc.5

The syrup of it was likewise given as the syrup of poppy:

> "Not poppy nor mandragora,
> Nor all the drowsy syrups of the world,
> Shall ever medicine thee to that sweet sleep
> Which thou hadst yesterday."—*Othello*, act iii. sc. 3.

As the hemlock and the mandrake, so the hebenon, &c. were directed to be gathered at midnight.*

> "Thoughts black, hands up, drugs fit, and time agreeing,
> Confederate season, else no creature seeing.
> Thou mixture rank of *midnight weeds* collected,
> With Hecate's ban thrice blasted, thrice infected,
> Thy natural magic and dire property
> On wholesome life usurp immediately."—Act iii. sc. 1.
> (*Pours the poison into the sleeper's ears.*)

Being a native of the countries of Circe and Medea, it was no doubt one of those which the latter collected to renovate Æson.

> "In such a night
> Medea gathered the enchanted herbs
> That did renew old Æson."

The Parisian Circea Lutetiana is by our botanists denominated *Enchanter's*, or Enchantress's nightshade; but I generally give it the shorter name of Hagwort, and, in the manner of Pythagoras, I dedicate it to the number 2, as the Horse-chestnut and Ragwort to the numbers 7 and 13, expressive of the major and minor modes in music, and of the weeks and lunations in astronomy.

The mandrake of Scripture, which had a remarkable smell, was evidently the flower of a different plant. In Hebrew it is *Dudain* or *Davidaim*, as it were Flos amoris, or Flor-amor; and hence probably our word Daffodils.

> "That come before the swallow dares, and take
> The winds of March with beauty."—*Winter's Tale*, act iv. sc. 3.

The daffodils of Milton were, however, our Crown imperials, as, lamenting the death of Lycidas, he says, alluding to the nectaries of that flower,

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* Vide Hebenon, p. 22.

"Bid Amaranthus all his beauties shed,
And Daffodillies fill their cups with tears,
To strew the laureate hearse where Lycid lies."

Poppy. Having found that our Foxglove is denominated poppies in the New Forest, I have inquired in this neighbourhood also, and find that it bears the same name here; and sometimes it is contracted into *pops.* A reason is given, that the flowers can be popped upon the hand. The Papaver therefore is improperly called in English by that name. The seeds of the purple Papaver are known by the name of maw-seed, which indicates the proper English appellation of that plant; and this agrees with its name in the different languages that are dialects of the Teutonic, and also with the Greek *mecon,* &c. Shakspeare, however, when he alludes to its entering into the composition of drowsy syrups, must have meant the Papaver somniferum.

Long purples. The name of Foxglove, or Folk's-gloves, Finger-flower, or Digitalis, and Dogfingers, as it is called in Wales, together with the magnificent spike of purple flowers borne by the Digitalis purpurea, induce me to conjecture that this plant is alluded to by our illustrious poet as long purples:

"There is a willow grows ascant the brook,
That shews his hoar leaves in the glassy stream;
Therewith fantastic garlands did she make
Of crow-flowers, nettles, daisies, and long purples,
That liberal shepherds give a grosser name,
But our cold maids do *dead-men's fingers* call them."—*Hamlet,* iv. 7.

The common *blue-bells,* to which my late excellent friend, R. A. Salisbury, Esq. attached the epithet of *festalis,* might perhaps be thought to be the garland-flower of *Ophelia;* but Lightfoot says it is the Orchis mascula, though Martyn considers that the name of Dead-men's fingers would better apply to the palmated species. Lightfoot, thinking probably that he had discovered the liberal name, may have supposed, upon this foundation alone, that the plant was an orchis. What this liberal name is in reality may be known to gentle shepherds, but by me is only supposed to be the same which Dampier has applied to a South American tree, whose flowers may perhaps resemble those of our digitalis in form, if not in colour. In Hampshire, the Lotus corniculatus is called dead-men's fingers, but in the vicinity of Bristol the plant has various names; fingers and toes, devil's fingers, devil's claws, and crow-toes. The last seems to point it out as the tufted crow-toe of Milton's Lycidas. Gerard, however, in his Index, applies this name to the hyacinth, which, by Johnson, in his supplementary Appendix to his edition of Gerard, is called crow-leek.

Gerard gives the name of *Crow-flowers* to the Lychnis floscuculi, while to another species, the dioica, he has attached that of crow-soap, which latter, in Johnson's appendix, is made synonymous with Saponaria, or soapwort. I think none of these were the crow-flowers of the poet. The Caltha palustris is called by that name in this part of the country, and is much used by children in their garlands and festivities, together with the flowers of Ranunculus bulbosus and R. acris, which are called Craysies and Mayflowers. The latter term in Middlesex is given to the Iris palustris. In Essex, the flowers called May are those of the Prunus spinosa, rather than the Cratægus oxyacantha. This discrepancy in our English names may be considered as a reproach to science; but the botanist, who delights in the contemplation and study of wild words as well as wild flowers, may find an ample field, or rather garden, for his erudition, in comparing the synonymes of British and European plants, especially those whose faculties were discovered and appreciated by our experienced and benevolent ancestors, who extended their researches

"To every herb that sips the dew."

The Caltha I take to be the Mary-buds of Shakspeare.

"And winking mary-buds begin
To ope their golden eyes,
With everything that pretty bin,
My lady sweet arise."—*Cymbeline*, act ii. sc. 3.

The Marygold is the Calendula.

"The marygold that goes to bed with the sun,
And with him rises weeping."—*Winter's Tale*, act iv. sc. 3.

Hebenon. Shakspeare ascribes the death of *Hamlet* to the juice of hebenon having been poured into his ear. As he beautifully describes the action of the poison, I transcribe the entire passage.

Ghost. "Sleeping within mine orchard,
(My custom always of the afternoon,)
Upon my secure hour thy uncle stole,
With juice of cursed hebenon in a vial,
And in the porches of mine ears did pour
The leperous distilment; whose effect
Holds such an enmity with blood of man,
That, swift as quicksilver, it courses through
The natural gates and alleys of the body,
And, with a sudden vigour, it doth posset
And curd, like eager droppings into milk,
The thin and wholesome blood: so did it mine;
And a most instant tetter bark'd about,
Most lazar-like, with vile and loathsome crust,
All my smooth body."—*Hamlet*, act i. sc. 5.

The word hebenon means black, the *h* being a non-essential letter.* Hence I conceive this plant to have been the Atropa

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* Vide Mandrake, p. 20.

Belladonna, which, where it is wild in Glocestershire, is by the country people called, from the colour of its fruit, Inkberries. From the following passage, I think it may have been used for poisoning darts and javelins:

> "Love's golden arrow at him should have fled,
> And not death's *ebon* dart, to strike him dead."—*Ven. and Adon.*

I make no doubt that the name of Henbane is a corruption of hebenon, and strictly applicable to the blackberry of the Dwale, so called from its effect in making us *dull* and sullen. (Hence Solanum? *Lethale.*)

> "And duller shouldst thou be than the fat weed
> That roots itself in ease on Lethe's wharf,
> Wouldst thou not stir in this."—*Hamlet*, act i. sc. 5.

As for the word *nightshade*, given probably from its forming a shed for the night, this seems appropriate to the dulcamara, whose bending twigs form an arbour like the clematis. I once imagined, though I have not had an opportunity of proving it, that the nightshade possessed the property of shedding and diffusing a peculiar smell during the night, and that it derived its name accordingly. This property has furnished appellations to the lily and the lilac. Whether the coagulations of the blood and the eruptions upon the skin, which attended the exhibition of hebenon, characterize the operation of belladonna, I must submit to the judgment of toxicologists, but I believe the description applies more strictly to that medicine than to any other.

TRANSACTIONS OF THE MEDICO-BOTANICAL SOCIETY OF LONDON.
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ESSENTIAL OIL OF LEMONS.

On the Use of the Essential Oil of Lemons in various Inflammations of the Eye; with Cases. By JOHN FOOTE, jun. Esq., L.S.A., A.M.B.S.

(Read June 11th, 1833.)

FOR several years past the use of stimulants in various external inflammations of the eye has been gradually gaining ground. An opinion formerly prevailed, not only among the public generally, but also very extensively in the profession, that the eye was a very tender organ, and would not bear rough handling. This idea tended in a great measure to retard the period when stimulant applications were first employed, and to induce great caution in their use. It was formerly the practice, in many inflammatory affections of this organ, to bleed, cup, and leech, to such an amount as frequently even to do serious injury to the constitution of the patient; such mischief indeed, that he would be years in getting over it, and perhaps might never entirely recover from its effects. Even lately, within a few years, a work has been published by Mr. Lawrence, one of the surgeons to St. Bartholomew's Hospital, on the Venereal Affections of the Eye, recommending, in the gonorrhœal ophthalmia, that blood should be drawn as long as any could be obtained from a vein! And what does he present us with as the results of his depleting practice? Truly, a melancholy list of lost eyes. On the other hand, if we look to the reports of Mr. Guthrie on the stimulant plan of treatment in the same affection, we find success attend his practice. I have seen about six or seven cases of this highly dangerous ophthalmia; they have been all treated on the stimulating plan, and have all invariably ended successfully. Having been a pupil at the Royal Westminster Ophthalmic Hospital for a period of nearly five years, I have had ample opportunities of testing the relative value of the stimulating and depletory plans of treatment, and, were all things equal, the fact that the former saves the patient from that abstraction of blood which is frequently urged to a great amount, would alone be sufficient with me to give it the preference: but it has other advantages; it effects a cure in a shorter period, and does not leave behind it, as the antiphlogistic plan generally does, a low or chronic inflammation of the parts, requiring a stimulant application to remove it.

To Mr. Guthrie belongs the credit of having introduced, and followed up to a very great extent, the plan of stimulation in acute external inflammations of the eye. Before his time, the vinum opii, solutions of nitrate of silver in distilled or rose water of various strengths, the unguentum zinci, or the unguentum hydrargyri nitratis dilutum, were employed, but not extensively, in the chronic inflammations; while Mr. Guthrie has used them, and stronger stimuli, in the acute stage of the same affections; a step, for the boldness of which he would have been severely blamed, but for the success with which his efforts were crowned. On the continent, Graafe and Walther, and some other surgeons, employed the solution of the nitrate of silver in purulent ophthalmia; but this application has the inconvenience, that, when employed for any length of time, it has the effect of staining the eye. This was first pointed out in print by Dr. Jacob, in the Dublin Medical Transactions, but was constantly inculcated at the Ophthalmic Hospital in Warwick street, to my certain knowledge, both by Dr. Forbes and Mr. Guthrie, the physician and surgeon to that institution.

In the May of 1827, Mr. Guthrie pushed his inquiries still further: he caused an ointment to be made with ten grains of the nitrate of silver to the drachm of simple ointment, and tried this in numerous cases. After several formulæ, variously modified, had been essayed, he finally decided on a preparation containing the argentum nitratum with Goulard's extract, mixed up with lard; he also employed an ointment made with the oxymuriate (the bi-chloride) of mercury, and another composed of simple cerate and the sulphas cupri, five grains to the drachm; but these latter he soon abandoned. These applications were employed by him in the various ophthalmiæ, acute and chronic, affecting the conjunctiva, the cornea, and the sclerotica; also in cases of nebula; but in these latter affections the milder stimuli are more properly required, as the disease generally takes a long time for its removal, and a milder, and at the same time a more frequently renewed, stimulus has a greater effect in exciting the absorbents to action. The celebrated French surgeon, Dupuytren, employs in this disease a combination of equal parts of calomel, sugar, and oxide of zinc, blown into the eye. Various other surgeons have tested the powers of these applications, and all speak in their favour; some more sparingly than others. Mr. Mackenzie, of Glasgow, is one of those who do not speak so highly of these remedies as they deserve; which need not excite our admiration, as he has hitherto employed a bad preparation. Mr. Lawrence has every wish to give the stimulant treatment a fair trial, but he has not as yet employed it in any case.

The theory on which this peculiar plan was first introduced was founded on an opinion of John Hunter's, which has become almost an axiom in medicine, viz. "that no two diseases can exist at one and the same time in the same constitution." That which he applied to the system generally has been adopted in reference to a single organ of that system: in consequence, it was conceived that, by exciting a more severe inflammation in the eye than that which already existed, but at the same time of shorter duration, a cure would be effected of the original malady. Whether this theory be or be not a valid one, it matters little, so long as the treatment deduced from it be successful; and that it has hitherto been attended with success, is amply proved by the records in the various medical journals of this and other countries, and by the case-books of the various ophthalmic institutions, where it has been fairly tried. In saying this, I am not alluding to any particular formula, to any peculiar preparation, but to all those remedies which come under the general head of external stimulants. Neither do I mean to aver that in no cases has it been unsuccessful: in some few, probably from idiosyncrasy, or extreme nervousness, the stimulant application appears to have done harm, and was necessarily abandoned; but these serve only to form the exception to the rule.

Under such circumstances, my ophthalmic lore having been acquired in a sthenic school, if I may so term it, it will scarcely be wondered at that, knowing from experience the stimulating properties of the essential oil of lemons, when in contact with the conjunctiva, I should be ready to admit its powers in the treatment of ophthalmia, and anxious to test its properties. For this purpose, the Royal Westminster Ophthalmic Hospital offered me an ample field.

In the year 1829, the following paragraph, which appeared in the *Collectanea* department of the London Medical and Physical Journal, under the head "Surgery," first directed my attention to this essential oil as a remedial agent in affections of the eye.

"*Efficacy of Lemon-juice in some Diseases of the Eye.* (From the *Journal für Chirurgie und Augenheilkunde,*) M. Werlitz thus employs this novel remedy. He cuts a slice of lemon-peel about an inch long and half an inch broad, places the outer part opposite the affected eye, the eyelids being opened, and by slight pressure squeezes out the little drops of volatile oil contained in the tissue of the rind into the eye. The sensation produced is acute, and continues for an hour or two. If the pain caused should be severe, cold applications are to be employed. The oil of the lemon-peel appears to increase thecapillary circulation, and to cause the absorption of morbid depositions.

"From experiments which have been made at La Charité at Berlin, it appears that the following diseases are remedied by this treatment: 1. Inflammations of the eye which are passing into a chronic state, and which affect the external parts, as the conjunctiva, cornea, or sclerotic, particularly if the small vessels are turgid. M. W. has also found the remedy useful in rheumatic, gonorrhœal, and scrofulous ophthalmia. 2. In pannus and pterygium. 3. In albugo and opacity of the cornea. 4. When the texture of the cornea has lost its healthy density, and becomes soft and spongy. The remedy may be employed frequently during the day, depending upon the degree of irritation it produces. M. W. relates seven cases of cures of various diseases of the eye effected by this treatment."

There are perhaps few persons who are unacquainted with the stimulant properties of the essential oil contained in the follicles of the bark or rind of the lemon or orange, as, in peeling these fruit, it frequently happens that a follicle or two burst, and a particle of the essence gets lodged in the conjunctiva. It was probably an accident of this kind which first induced Mr. Werlitz to try its powers in inflammations of the eye, and thus add another remedy to the list of the ophthalmic materia medica. Having obtained the permission of Mr. Guthrie at a period far antecedent to the time when I actually availed myself of it, I have recently given this essential oil a trial at the Ophthalmic Hospital, in various inflammations, more especially the catarrhal, which the peculiar constitution of the atmosphere at the present time has rendered epidemic. In the majority of cases in which I applied it, I found it successful; in a few it appeared not to be of use, and the application of cupping-glasses to the temple was ultimately required. It generally caused pain, varying in duration from half an hour to three, and also in intensity in different individuals. In one person, a gentleman of the medical profession, having increased vascularity of the eyelid, and who had been accustomed to have the vinum opii applied, it excited pain to such a degree that he declared his eye felt as if on fire; but this unpleasant symptom went off in about ten minutes; another person, to whose eye I applied it, said that the pain it occasioned was trifling, and not at all to be compared with that which arises from the application of the vinum opii. Such is the difference of sensibility in different individuals; and I may add, that both experienced benefit from it. I have deemed it necessary, in general, to administer aperients and other medicines, in some of the cases in which I employed it, according to the severity of the symptoms indicating general irritation.

M. Werlitz does not apply the oil at all in a scientific or satisfactory manner. His method of squirting the essence from the rind appears to me to be both rude and coarse, and could scarcely be employed in private practice; I have therefore adopted another way, which I shall shortly mention. In strumous ophthalmia, it is exceedingly difficult, from the tumefaction of the eyelids and the restlessness of the child, so to separate the eyelids as to obtain a view of the eye itself, and, under such circumstances, it would be next to impossible to keep them open a sufficient length of time, until the operator shall have properly injected the drop. In the trials to which I have subjected it, I have invariably used the essential oil of lemon of the shops, and have dropped it in the eye in the same manner that the vinum opii is applied, namely, with a quill cut in the shape of a pen, but rounded off, instead of having a point. It requires to be dropped in very speedily, as it rapidly volatilizes. I have always, when it has been in my power, applied the essence once a-day, but it has occasionally happened that the patients have neglected attendance for two, three, or more days, and have then returned much worse than they were previously. I may also add, that occasionally, even when they were regular in their attendance, a relapse would take place; and this occurred in a most remarkable manner, on Saturday the 1st of June. On the preceding day, several cases were reported as rapidly improving, or nearly convalescent, and yet, on the 1st, with perhaps one exception, they returned with a fresh attack. Had only one or two cases relapsed, I might have attributed it to negligence and inattention to my directions on the part of the patient, or to exposure to cold; but, as by far the majority of the cases were similarly affected, I could not avoid considering it as something remarkable, and dependent on some change in the atmosphere.

In summing up, I may say, I have employed the essence of lemons in various acute and chronic inflammations, in opacity of the cornea, and the purulent and muco-purulent ophthalmia, but not in pannus, pterygium, or albugo; cases of the latter description not having come under my care latterly. I should consider, from the nature of the complaints, that it may prove advantageous in albugo, but in regard to the other two diseases, I should be very dubious of its powers. On the whole, I believe it to be preferable to the vinum opii in all cases where a stimulant is indicated, and equal, in many, to the unguentum argent. nitratis, but falling short of it in others; while the great facility with which it may be obtained and applied, renders it a great acquisition to the country surgeon, who would find it inconvenient to spend a couple of hours over the mortar in pulverizing the nitrate of silver, with the prospect that, when he has made his ointment, he may be unable to use it, from the circumstance that he has left a few granules of the nitrate not sufficiently fine, and which no after-treatment will be able properly to reduce. I have tried it in about five and twenty cases; and shall subjoin the detail of a few, with which I shall conclude.

CASE I. *Catarrhal Ophthalmia, treated by the Oleum Limonum.*

Sarah Lawrence, ætat. twenty-three, admitted the 17th May, 1833. Catarrhal inflammation of the left eye, of a month's duration. The disease was not noticed for the first week, but was afterwards treated by a surgeon; leeches were applied to the temple, a blister behind the ear, lotions, and medicines internally; she says the eye improved a little under the treatment pursued. She complains of pain in the eye and parts adjacent, so severe as nearly to prevent her sleeping at night; considerable lachrymation, tears scalding; vision misty; the eyelids used to adhere in the morning, but not for the last two or three days. Her general health is somewhat affected by the disease, appetite failing, tongue rather furred, bowels open. The conjunctiva of the ball and eyelids injected and inflamed, the affection of the lids being the more intense; a pustule forming on the lower margin of the cornea. The vessels of the conjunctiva of the ball are more of a pink colour, but do not form the zone around the cornea. Neither the cornea nor the iris are affected.—App. Ol. Ess. Limon. gutt. ad ocul.: ℞. Magnes. Sulphatis ℥i.; Infusi Sennæ comp. lb.ss. solve. Capiat coch. larga ij. omni mane primo.

20th. The pain and inflammation are diminished, and vision is improving; the pustule is small; bowels opened by medicine.—Rep. Ol. Limon. et Mist. purgans.

21st. Inflammation very much diminished.—Rep. Ol. Limon.

22d. The pain has nearly gone; vision considerably improved. —Rep. Ol. Limon. et Mist. purgans.

23d. Vision is as perfect as ever. Slight inflammation of the eyelids still exists.

27th. Is going into the country. To have the vinum opii dropped in occasionally.

CASE II. *Catarrhal Inflammation in a Strumous Constitution, treated by the Oleum Limonum and Alteratives.*

William Minnifit, ætat. three, was admitted May the 17th, 1833; a child of strumous constitution, and apparently in ill health. The conjunctiva of the eyelids and ball of the left eye are very much inflamed, the cornea slightly participating, and having a small speck near the centre; there is considerable lachrymation, tears scalding, attended with pain and intolerance of light; he cannot open the eye. The bowels are not regular, and he is rather feverish.—App. Ol. Limon. ℞. Hyd. cum Cretâ, gr. ij.; Pulv. Rhei, gr. ij. M. fiat pulv. sumat i. nocte maneque.

20th. His vision is improved, and he can bear the light better; the pain and inflammation are diminished; bowels open.—Rep. Ol. Limon. et Pulv.

22d. Improving.—Rep.

27th. Has not attended since the 22d. The inflammation is greater, and all the symptoms are materially increased in severity.—Rep. Ol. Limon. et Pulveres, nocte maneque sumend.

31st. Rather better.—Cont.

June 3d. Nearly well.—Rep.

5th. Dismissed, cured.

CASE III. *Pustular Inflammation, treated by the Ol. Limon.*

Frederick Plumber, ætat. six, admitted 17th May, 1833; a child of a strumous habit of body. Has pustular inflammation of the right eye, of five days' duration. There is a pustule on the outer, and another on the inner margin of the cornea, attended with inflammation of the conjunctiva of the ball and lids. There is not much pain at present. Has merely applied a bread and water poultice, and taken aperient medicine.—App. Ess. Limon. Pulv. Hyd. cum Cretâ et Rheo i. nocte maneque sumend.

20th. Is nearly well; the pustules are scarcely visible.—Rep.

22d. Dismissed.

CASE IV. *Pustular Inflammation, treated by the Ol. Limon.*

Mary Mirvin, æt. six, admitted May 24th, 1833, with pustular inflammation affecting the lower margin of the cornea of the left eye, attended with vascularity of the conjunctiva covering that part; considerable lachrymation and pain. The disease has existed a month; child otherwise healthy.—App. Ol. Limon. Pulv. Hyd. cum Cretâ, cum Rheo, n. m. sumend.

25th. There is less pain, and vision is improved; the pustule is smaller, and the vascularity is diminished.—Ol. Limon. et pulveres.

27th. Improving. Bowels not open.—Rep. Oleum Limon. ℞. Magn. Sulph. ℥i. fiant pulveres tres, sumat i. p. r. n.

June 1st. Nearly well.—Rep.

3d. Rep. Oleum, et Magnesiæ Sulphas.

7th. Dismissed.

CASE V. *Opacity of the Cornea, treated by the Ol. Limon.*

Fanny Folkes, ætat. eleven, was admitted an in-patient in the Westminster Hospital, with opacities on each cornea. Her eyes had been bad for the period of two years, the disease being the result of inflammation. Her vision is very imperfect; she cannot distinguish letters. The opacities are nearly central, attended with a general muddiness of the cornea. Has been under treatment for some time, but without deriving any advantage. There is not any inflammation of the eye, or its appendages, at present.

June 7th, (ten days after admission.) The essential oil of lemons has been applied daily, with the effect of producing considerable smarting pain, lasting about a quarter of an hour. The general muddiness of the cornea is much diminished; the nebulæ are not so evident as when she was admitted, and her vision is so much improved that she can distinguish the letters, and spell them, on her admission-ticket. Her bowels have been regulated by me-
casionally.—Let her continue.

CASE VI. *Muco-purulent Ophthalmia, followed by Erysipelas of the Face, extending to the Eyelids, treated with the Ol. Limon. and the Tartar Emetic.*

Timothy Fitzpatrick, ætat. fifty, a man of a sanguineous temperament, short and stout, has been in attendance a considerable period.

About two years ago, he lost the sight of the left eye from inflammation, in consequence of which the cornea and other parts became disorganized, and the cavity of the anterior chamber lost, the cornea lucida being completely flattened. He has been an out-patient occasionally several times since, for attacks of inflammation affecting the conjunctiva covering the ball and lining the eyelids.

During the night of the 14-15th of May, 1833, he suffered from a fresh accession of pain in the left eye, attended with a considerable discharge, the pain chiefly at the outer canthus. He does not know any cause for this attack; says he has not caught cold lately, nor has anything got into the eye that he is aware of. On examining the organ (May 15th,) there appears considerable inflammation of the conjunctiva of the ball and lids, that membrane being exceedingly vascular and chemosed; a fluid of a mucopurulent character is constantly and rapidly secreted; the pain continuing at the outer canthus. [Several symptoms are here either wanting or masked, in consequence of the loss of vision; such as the aversion to, and the inability to bear, the light, the degree to which vision is affected by the inflammation, &c.] The tongue is covered with a whitish fur, and the bowels are regular.—Applicatur gutta Olei Essentialis Limonis. Capiat Magnesiæ Sulphatis ℥i. mane.

16th. The application of the drop did not cause much pain, nor did it last any length of time. The eye felt easier for some time after, the original pain in the canthus beginning to return about nine in the evening, when he went to bed. He could not sleep, from the pain. The discharge appears to be rather increased, and there is a blush of erysipelatous inflammation on the left cheek, extending to the eyelids, which are tumefied and inflamed externally and internally; the cheek and eyelids are puffy; skin hot; no pain in the head, but it continues at the outer canthus, rather however as soreness than actual pain; the tongue is covered with a dirty-brown fur; a slight acceleration of pulse. The salts operated well.—Rep. Ol. Limon. App. Ung. Cetacei palpebris nocte. Aqua tepida sæpe indies injicienda. ℞. Antimonii Tartarizato, grana duo; Magnesiæ Sulphatis, unciam; Aquæ, uncias octo. Solve, fiat mistura. Capiat cochlearia ampla duo omni horâ.

17th. The drop gave him considerable pain. He passed a better night. There is not so much tumefaction of the lids, nor general inflammation; he thinks that there is more discharge, but that it is thicker. The mixture opened the bowels freely, and excited slight nausea: tongue furred.—Rep. Ol. Limon. Lotio Aluminis sæpe utend. Rep. mixture, sumatur dosis omni bihorâ.

19th. The tumefaction has nearly entirely subsided; he can open the eye very easily; sleeps well; the inflammation of the eye abating, and discharge lessening; the erysipelatous blush has almost gone, as likewise the discoloration of the eyelids; tongue continues furred; bowels open.—Persistat in usu omnium medicamentorum.

22d. Improving.—Rep.

From this date to the 3d of June he gradually improved; there remained then very little discharge, and that depending on a granular state of the eyelids, which has latterly come on. No pain or uneasiness.—Ordered the Sulphas Cupri, to remove the granulated appearance of the lids.

Case VII. *Purulent Ophthalmia, dependent on Leucorrhœa in the Mother; Use of Ol. Limonum.*

David Davis, aged six weeks, was admitted May 22d, 1833, with purulent ophthalmia of both eyes, of five weeks' duration. The mother has had leucorrhœa for some time previous to parturition, and it still continues on her. The child's eyes appeared weak soon after birth, but she could not ascertain the exact period when they became inflamed. Within a week however after birth, purulent matter, of a proper consistence and yellowish colour, was secreted abundantly from each eye, the lids at the same time being very much tumefied. The mother has never done anything for them, save cleansing them now and then with warm water. There is at present considerable discharge of a tenacious, yellowish matter, attended with inflammation of the eyelids, which are not so tumefied as they were; the inflammation extends, but in a milder degree, to the ball of the eyes; on the centre of the corneæ there is a speck already formed. The child can open the eyes, but not easily; its health has suffered very much; the bowels are open, but the stools are of a dark colour, and the little patient is very much emaciated.—Applicetur Oleum Limonum ocul. sing. Pulv. alter. i. nocte maneque sumendus. To continue the injection of warm water between the eyelids, and that frequently.

24th. The discharge is very slight; can open the eyelids easily; the eyeballs appear to be nearly clear from inflammation, which is also lessened on the lids. The bowels are open; stools of a greenish colour. It appears that, by mistake, the wrong powders were given, and the child had a large dose of the tartarized antimony, instead of the alterative powder which had been directed.—Rep. Ol. Limon. Pulv. alterat. ss. n. et m. sumend.*

25th. Is still much affected by the powders, the same kind having been given as at last report. There is rather more discharge from the left, but very little from the right.—Rep. Ol. Limon. Not to have any powders.

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* When this order was given, the mistake already recorded was not ascertained to have happened.

27th. A little better.—Rep. Ol.

28th. Discharge lessened; is altogether improved.—Cont.

31st. Nearly well.—Rep.

June 1st. There appears to be an increase of discharge, and the child is not so well.—Rep.

4th. There is more discharge and inflammation, and the lids are again tumefied.—Rep. Ol. Limon. Hyd. cum Cretâ, gr. ij. Pulv. p. r. n. sumend.

6th. Discharge much diminished.—Rep.

7th. Very little purulent matter secreted.—Cont.

9th. Nearly well.—Rep.

CRITICAL ANALYSES.

Quæ laudanda forent, et quæ culpanda, vicissim,
[illegible] prius, cretâ; mox hæc, carbone, *notamus.*—Persius.

Observations on the Testicles. By James Russell, f.r.c.s., late Regius Professor of Clinical Surgery in the University of Edinburgh, Vice-President of the Royal Society of Edinburgh, &c.—Foolscap 8vo. pp. 276. Black, Edinburgh; Longman and Co., London.

Notwithstanding the self-gratulatory tone of the dedication, this volume is written in a plain, easy, and familiar style; and we have derived some pleasure from its perusal, which is more than we frequently do from elementary works of a preceptive character. The chief value of such works lies in their simplicity and clearness, and their most important duty is to inculcate established principles, and to reiterate truths acknowledged and confessed by all. Novelty is no recommendation to such works; for, although lateness of discovery does not lessen the worth of facts, the majority of truths are homely and old-fashioned. Hence, "Elements," "Lectures," and "Introductions," however useful they may prove to the student, do not in general do more than repeat to the veteran a thrice-told tale.

But these observations of Mr. Russell hold a somewhat higher rank, and demand, of course, more general attention; for, being founded on lectures composed "about thirty years ago," and "improved by the additional information which the author has since acquired from experience and study," they cannot but contain some practical information worthy the attention of all; especially as we learn that the author has "had many opportunities, during the long period above mentioned," of studying the important class of affections about which he writes, "under a great variety of modifications."

The essay consists of seven chapters, which treat successively of, 1, *the number of the testicles;* 2, *descent of the testicles;* 3, *diseases of the scrotum;* 4, *tunica vaginalis;* 5, *hydrocele;* 6, *diseases of the testicles;* 7, *diseases of the spermatic cord.*

The first chapter commences with a truism, viz. that "a man is naturally provided with two testicles, which are lodged in the scrotum;" and it might be supposed that the thesis would exclude much else. But the author has contrived to collect details of some cases of monorchides and triorchides, which are pathologically and physiologically interesting.

"In a few individuals, the number of testicles has been found greater or less than the usual standard, more frequently less, and sometimes entirely wanting. The total want of testicles in the scrotum is a circumstance very alarming to parents, from the apprehensions which they naturally entertain respecting the virility of their child. These apprehensions, however, are for the most part groundless, as the absence of testicles from the scrotum arises merely from their having failed to descend from the abdomen before birth; there being undoubted instances of men without the vestige of testicles in the scrotum having become the fathers of numerous families. And in dissecting the bodies of persons of this peculiar formation of parts, one or two testicles, of a full size, and perfect in all respects, have almost invariably been found in the abdomen, so that a dissection in which the testicles were entirely wanting, both in the scrotum and in the abdomen, is a very rare occurrence.

"A few cases of monorchides of a somewhat equivocal character, are found in the records of medicine. They are modified by different circumstances, which constitute three varieties.

"In the first variety, the solitary testicle was divided in the middle by a deep fissure, the lobes on each side were as large as a full grown testicle, and each was provided with a spermatic chord, which ran up to the same side of the body. The fissure, the lobes, and the duplication of parts, obviously result from the partial coalescence of two testicles.

"The second variety has undoubtedly the same origin, only the coalescence is more general, and the incorporation more complete. The single testicle was much larger than in an ordinary full-sized testicle, equable in its surface, without any deep fissure dividing it into lobes, and provided with two spermatic chords, running to the different sides of the body. From the simple structure of the testicles, it is easily conceivable how both might be incorporated, without destroying their function as secreting organs.

"The third variety agrees with the other two, in having one testicle and two spermatic chords, while it differs from them in the circumstance of both spermatic chords running to the same side of the body. The origin of this variety is not so obvious, though, like the other two, it is not productive of any inconvenience to the individual." (P. 1.)

"The annals of medicine contain many cases of reputed triorchides, though it is not possible to lay down any general rules for the diagnosis, since, from the nature of the peculiarity, their true character can be ascertained only by the result of a special investigation. Various authors mention the peculiarity of three testicles as hereditary in certain families.

"Although there is no natural limit to the number of testicles, the existence of more than three is an exceedingly rare occurrence. There are, indeed, many cases recorded of persons with four testicles, but the fact has not been verified by dissection. It has been said that persons have appeared with five, or even six testicles. In the person who had six testicles, four were of the natural size, and two much smaller. I shall not, however, dwell on a discussion for which the data are too defective to lead to any positive conclusion.

"With regard to the amorous propensities and generative faculties of persons with supernumerary testicles, the report of authors is in general favorable to their being more powerful than in other men. But as those authors often indulge in a playsome humour, their evidence must be taken with a certain degree of reserve. For, in the investigation of such a subject, it is hardly philosophical to mention the case of a monk with three testicles, who was so salacious as to have indomitable passions, which prevented him from keeping his vow of chastity; or that of a land-grave, with a like peculiarity, who was allowed a concubine as a reasonable indulgence to a man of his amorous complexion, who could not remain satisfied with the use of a single woman."* (P. 7.)

We think our author places rather too implicit reliance upon some of the cases referred to as recorded in "the Annals of Medicine." That the testicles may be lobulated, and that, from peculiar circumstances, they may become united, will be found to be only in accordance with the established laws of epigenesis; but the occurrence of a third or fourth distinct testicle, (not a lobule, or lobules, detached or attached,) and especially the passage of the two spermatic cords to the same side, are such wide wanderings, as to require the most direct and circumstantial evidence to warrant their truth, and to convince the world that some errors in the examinations have not vitiated the accounts; especially as neither Morgagni, nor Haller, nor Meckel, ever discovered a third testicle in the dissections of reputed triorchides," although other authorities, of less weight, have put several supposed cases on record. These, however, have most probably been detached lobules, mistaken for distinct testicles.

With regard to the Descent of the Testicles, the subject of the second chapter, the author observes, that nothing is known respecting the cause of occasional retardation; and he continues,

"It is wholly unconnected with any imperfection in the confined testicle, since, upon an average of observations, the retained testicle is as fully formed and as large as those which have descended into the scrotum." (P. 12.)

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* "A dog, remarkable for his salacity, had two testicles in the scrotum, and one in the abdomen.

This is certainly contrary to our experience: we have never met with a case in which the descent of the testicle was delayed, in which its development was not retarded, if not entirely arrested. Cases may occur in which, from preternatural impediments in the canal, the descent may be occasionally delayed or prevented; but, in general, we believe that the want of development is closely connected with the persistence of the testicles in the abdomen.

The following practical remarks are good; reports of such cases of error we have occasionally published in our Journal.

"When a testicle is arrested in its progress through the inguinal canal, it produces a swelling in the groin, which is readily mistaken for an inguinal hernia. Both complaints occupy the same place in the inguinal canal, both proceed from the protrusion of a viscus from the abdomen, and, if the medical attendant be not aware that the patient has no testicle in the same side of the scrotum, he regards the case as an inguinal hernia. Under this mistake, a fruitless attempt is made to reduce the hernia, and, when this attempt fails, a bandage is applied, which, by exciting pain, leads to a more accurate examination of the symptoms, and to the subsequent discovery of the true nature of the case; for, when an arrested testicle is the cause of the swelling, there is greater sensibility to pressure, and a peculiar sensation which characterizes the feeling of a testicle. The difficulty of the diagnosis is occasionally increased, by the complication of two complaints, which the late descent of the testicle contributes much to favour. In the first place, when the patient has passed the age of puberty, the large size of the testicle widens the inguinal canal to a preternatural degree. In the second place, the surrounding parts have their disposition to contract which existed in early life greatly impaired, so that, from the concurrence of those two causes, there is an opening left into which some of the abdominal viscera may easily enter, and produce a hernia of the congenital form." (P. 12.)

After quoting the very curious case recorded by Mr. Hutcheson, in which a sailor had imposed upon the examining surgeons many times, by elevating his testicles into the inguinal passages, and thus simulating a double hernia, those curious deviations from the ordinary course of descent are referred to, in which the testicle, instead of descending through the inguinal canal, accompanies the femoral vessels in their progress under Poupart's ligament, making its appearance at the bend of the thigh. Arnaud gives several instances of this singular variety. The most instructive case is detailed at considerable length. The following are the chief points worthy attention.

"An officer, about forty years of age, consulted Mr. Arnaud respecting a swelling in the bend of the thigh, which was taken for a hernia. Upon an accurate examination of the case, however, Mr.

Arnaud satisfied himself that the swelling was not a hernia, but a misplaced testicle. He adduces three reasons in support of his opinion. 1st, That the officer had not a testicle in the same side of the scrotum. 2d, That the swelling had the form and consistence of a testicle, the appearance of the spermatic chord alone being sufficient to distinguish the case from a case of crural hernia. 3d, That pressure produced exactly the same sensation on this as on the other testicle." (P. 23.)

Our author gives to the most commonplace truths an interest, by the appositeness of his illustrations, so that we are tempted to multiply our extracts.

"The arrival of the testicles in the scrotum does not produce any change in the constitution. They are of a small size, and are not endowed with much sensibility during infancy; when full grown, they are rarely equal in size, a circumstance which ought to be known by all practical surgeons; otherwise their ignorance may lead to very distressing consequences. Fabricius Aquapendente gives a most instructive instance of this in the case of a young man, who, upon observing his testicles to be unequal in size, became alarmed, and consulted a rupture-doctor about his supposed disease. The quack pronounced the case to be very alarming, and advised the immediate extirpation of the testicle. The patient, however, being unwilling to submit to so severe an operation without farther advice, consulted Aquapendente, who relieved his fear, by satisfying him that the supposed disease was nothing more than a natural inequality in the size of the testicles, a difference which almost constantly takes place.

"The testicles likewise are in general suspended at unequal distances from the pubis." (P. 24.)

In the third chapter, on the Diseases of the Scrotum, there is much instructive matter, collected from various sources; but, as it chiefly consists of extracts from the works of Acrel, Titley, and others, it will not afford us many quotations: we will take, however, the following.

"The scrotum is more predisposed to mortify than most parts of the body. It occasionally mortifies at the termination of tedious exhausting fevers, and on attacks of erysipelas. Such cases are always severe, though not fatal, excepting under circumstances particularly unfavorable. The whole of the scrotum is sometimes completely destroyed, and afterwards completely regenerated, even to the production of the hair. This, however, very rarely occurs. Even the perfect regeneration of the skin is by no means a constant termination. In those cases which I have seen, the naked surface of the testicle, or of the tunica vaginalis, was, after the cure, covered only with a thin pellicle, which adhered to the subjacent parts, and did not possess any mobility. This pellicle or cicatrix is often so limited in extent, as to confine the testicles to one situation, and sometimes even to subject them to an inconvenient degree of pressure. In one case, the constriction was so great as to create the most excruciating pain, which rendered the life of the patient miserable, and induced him to submit to the removal of a testicle. But as this partial operation did not procure complete relief, he soon after requested to have the other testicle also removed. This was an extreme case. But when the tendency to constriction once begins there is no method known of arresting its progress, nor of palliating its effects." (P. 64.)

"The most singular disease of the scrotum is the growth of a tumor of enormous size. In a memorable case of the kind, Ger. Ephr. 1692, the tumor attained the weight of more than 200 lb., a weight considerably greater than the weight of a well grown man of ordinary stature. These tumors, in general, begin insensibly without pain, and are not perceived till they attract notice by an obvious swelling. In a few cases they are the consequences of a blow, or their commencement is marked by a slight attack of pain, which is temporary, and does not return during the course of the complaint. Their progress is gradual and regular, and they may often be traced back for fifteen or twenty years. They do not occasion any inconvenience, excepting what arises from their bulk and weight. They are not only free from pain, but endued with very low powers of sensibility, since neither the application of caustic nor the introduction of setons, excite any troublesome degree of irritation. A friend of mine, who practised some time in the West Indies, informed me that the rats sometimes fed upon these enormous tumors, while the patient lay in a most helpless condition, and was unable to defend himself from their attacks. The tumors bore being handled with considerable roughness, without the patient suffering from this rude treatment, excepting when the pressure was made on the part of the surface corresponding to the situation of the testicle; then, indeed, the patient complained of pain, as the testicle still retained its natural sensibility, or even possessed it in an unusual degree. The growth of such immense swellings does not affect the constitution, nor produce any symptom of debility. It does not, in all cases, even impair the function of generation, as Delpech particularly mentions that neither the penis nor testicles had lost any thing of their natural faculties. In this respect, however, the symptoms are not uniform, since, in some cases, the functions of the testicles seem to be suspended or impaired. In the case mentioned by Mr. Corse Scott, the patient had not had any connexion with a female for ten years before the time Mr. Scott saw him. In the case described by Dr. Titley, the patient had lascivious desires and erections, but no emissions. While Dr. Wells states that the patient's health remained unimpaired, while his virile powers gradually diminished, as the scrotal tumor increased.

"It is necessary to investigate these particulars with great care, since the expediency of saving or of removing the testicle often depends upon the result of this investigation.

"This very singular disease of the scrotum belongs to the warmer climates of the globe, the East and West Indies, and the correspondent latitudes of Africa. It is endemic, and very prevalent among the Bambara nation, on the coast of Guinea, among whom the misfortune of having a monstrous testicle is regarded as a mark of nobility. When the patient goes out to ride, the testicle is supported on a bowl placed on the pummel of the saddle; and when of the largest size, supported on a sheet passed over the shoulders, and dragged along the ground, when he attempts to walk.

"I know of only two well authenticated cases of this disease having originated in Europe. One occurred in the practice of Mr. Liston, Surgeon to the Royal Infirmary, Edinburgh; and the other in that of Mr. Delpech, of Montpelier. There is a third case, by Mr. Hall, of Manchester, probably of the same kind, though, as the symptoms are not decidedly marked, I have not included it in the number of well authenticated cases." (P. 68,)

It appears, from Mr. Russell's account, that the chimney-sweeper's cancer is rarely met with in Edinburgh, although of such frequent occurrence in London; and, as he observes, from the Parisian surgeons being silent on the subject, it is probable that it seldom occurs in Paris.

The chapter on the Tunica Vaginalis is short, and will not afford a single extract; but the following, which treats of Hydrocele, and in which the diagnoses are canvassed, and the merits of the different modes of cure discussed, will afford us matter for several.

"A hydrocele may be mistaken for a disease of a very different nature, or, conversely, another disease mistaken for a hydrocele; or, although the case be actually a hydrocele, it may be accompanied with singular circumstances, which are not disclosed at the time of the investigation. Thus, a hydrocele retaining its transparency may, instead of containing a fluid, contain a collection of hydatids. This case, though rare, I have known to occur, to the great embarrassment of the operator. A still more rare instance of a case of transparency not being an absolute criterion of hydrocele is mentioned by Richter, in the case of a patient who had a rheumatic swelling of the testicles, in which the affected testicle was transparent. The affection passed from the one testicle to the other, an alternation characteristic of rheumatic complaints. Besides hydatids, I have known an adventitious encysted transparent tumor adhering to the epididymis, and filling part of the tunica vaginalis. The existence of such a tumor is not known previously to the operation.

"But the most frequent causes of difficulty arise from want of transparency, either from opacity in the contained fluid, or from the preternatural thickness and consequent opacity of the tunica vaginalis. This latter is by far the most frequent. It is likewise, in general, accompanied with a degree of firmness, which prevents the fluctuation of the contained fluid, or the peculiar sensation of the testicle from being indistinctly perceived. When the hydrocele is tense, and of long standing, it is frequently accompanied with occasional acute lancinating pains, resembling those of a scirrhous testicle. Under these imposing symptoms a hydrocele has been removed as a case of scirrhous testicle, when a subsequent dissection has shewn the testicle to have been quite sound, and castration unnecessary. So calamitous a mistake points out the expediency of, in all cases, dividing the tunica vaginalis before proceeding to operate." (P. 111.)

"Another cause of deception is presented by a singular modification of congenital hernia. In this case, the lower portion of the omentum in contact with the testicle became soft from mortification: this preternatural softness misled the surgeon, who, not being prepared to expect any such change, conceived the case to be a hydrocele. The mistake, however, did not occasion any serious inconvenience." (P. 117.)

"The tendency of a hydrocele to increase is not circumscribed within any determinate limits. It sometimes attains a most enormous bulk. Mr. Cline drew off six quarts of fluid from a hydrocele on the person of Mr. Gibbon, the celebrated historian. But by far the largest on record is one mentioned by Mursinna, which was twenty-seven inches in its long axis, and seventeen in its transverse. The enormous size of this hydrocele almost exceeds the bounds of credibility; I shall therefore give the measurement in the author's own words: 'Diese Geschwulst betrug in ihrer grossten Lange, von oben bis unten, drey Viertheil einer Elle, und in der Mitte, im Durchschnitt von einer Seite zur andern, eine halbe Elle weniger einem Zoll." (P. 124.)

We extract the following as being a good summary of the results of different modes of treatment pursued in cases of hydrocele, and as affording a view of the opinion arrived at by the author, after so long a practice and such considerable experience.

"Whatever may be the cause of the hydrocele, the particular case under consideration may be either idiopathic or symptomatic of some other affection. Mr. Pott relates a very instructive case, in which the hydrocele was evidently dependent on a fit of gout, as the swelling disappeared along with the departure of the gout. And Sir E. Home relates three cases symptomatic of an irritation in the urethra, in which the hydrocele disappeared upon the cure of the strictures.

"Hydrocele, though a troublesome complaint, and very annoying from its unwieldy bulk, is rarely painful, and never dangerous. It occurs at all periods of life. Infants are occasionally born with hydrocele; but in them, or in children at an early age, the hydrocele often admits of a spontaneous cure, or its cure may be promoted, and insured almost to certainty, by the application of stimulating embrocations. But hydrocele, in patients of advanced years, is a chronic, stationary complaint, which does not usually undergo any favorable change spontaneously. In a few cases, indeed, the accumulated fluid is completely removed by absorption.

"Besides a spontaneous cure of hydrocele by the natural powers of the system, an accidental cure is sometimes obtained by the rupture of the containing parts. Dr. Douglas relates two cases of tense hydroceles, in both of which the tunica vaginalis gave way upon a slight inflexion of the body. The effused fluid escaped into the surrounding cellular membrane, from which it was speedily absorbed. A like rupture is sometimes occasioned by external violence. In either case the cure is complete for a time, but not always permanent. In one case, in which the parts were greatly distended, not only the tunica vaginalis, but the integuments of the scrotum also gave way, in consequence of a great exertion. By this means the whole fluid was completely evacuated, and a permanent cure obtained.

"The very frequent occurrence of hydrocele has afforded ample opportunity to try various methods of cure, and to ascertain their respective values.

"The only mode of cure now employed consists in evacuating the fluid by an operation. This operation is more or less simple, according to the object which the surgeon has in view. If his sole object be to evacuate the fluid, without using any precaution to prevent a return of the collection, he has only to make an opening into the cavity of the tunica vaginalis, by which the fluid escapes. The mere evacuation of the fluid, however, produces only a temporary, or what is in general termed a palliative, cure. It is, however, so easy, and for a time relieves the patient so completely, that it is often employed as a matter of convenience. It is simple and easily performed; but may prove troublesome or dangerous, by imprudence or mismanagement. If the surgeon is not sufficiently on his guard, he may wound the testicle, or the artery of the spermatic cord, which, by occasioning an unrestrainable hæmorrhage, has led to the loss of the testicle; or if, by undervaluing the risk of irritation, an attack of inflammation has been excited subsequent to the operation, the consequences have proved fatal.

"When the surgeon has a higher object in view, by using means to prevent a relapse, the cure is termed radical. This object is attainable in two ways: either by restoring the healthy action of the parts, or by obliterating the cavity of the tunica vaginalis. For this purpose, six different modes of operating have been employed. The temporary irritation of the tunica vaginalis by the canula or by a bougie; the introduction of a seton; the excision of the tunica vaginalis; the application of caustic; the injection of a stimulating fluid into the cavity of the tunica vaginalis; or a longitudinal division of the tunica vaginalis through its whole length. The first four methods are now almost universally abandoned. I shall therefore confine my remarks to a comparison between the merits of the cure by injection, and the cure by incision. But, whichever method is preferred, it is desirable to operate before the hydrocele has attained a large size; since, when the hydrocele is very large, the inflammation, by spreading over a more extensive surface, produces more violent symptoms. To avoid this inconvenience, it is usual to evacuate the fluid, watch the progress of the subsequent collection, and, when the hydrocele has attained a convenient size, proceed to perform the radical cure.

"The cure by incision is by far the most ancient, and the most generally employed; the cure by injection has been more recently introduced. Between sixty and seventy years ago, Mr. Sabatier, in the Memoirs of the Academy of Surgery of Paris, published an excellent dissertation on the cure of hydrocele, explaining particularly the cure by injection. About twenty years after, Sir James Earle published an essay, strongly recommending the cure by injection. His recommendation produced a powerful impression on the minds of the British surgeons, so that the cure by injection became the favourite operation. It has the advantage of being more easily performed, and of subjecting the patient to a shorter confinement. But, though the consecutive symptoms are in general more mild, yet a greater proportion of deaths happen in consequence of the cure by injection than of the cure by incision.[*] It is likewise more uncertain as to its efficacy, as the hydrocele sometimes returns more than once. The possibility of these frequent returns affords a proof that the cavity of the tunica vaginalis is not obliterated. Indeed, the frequency of the secondary effusion, immediately after the operation, leads to the same conclusion. The cure by injection, therefore, must depend upon a change in the action of the parts, not upon an obliteration of the vaginal cavity. This opinion has the support of Mr. B. Bell and Mr. Ramsden.

"The cure by incision, when properly conducted, accomplishes the complete obliteration of the vaginal cavity, which renders a relapse impossible. A gentleman who had the cure by injection performed without success, submitted afterwards to the cure by incision, and declared that the cure by injection was the more painful of the two. I have paid great attention to the subject, with the result of finding my confidence in the certainty and permanence of the cure by injection gradually abate." (P. 126.)

Hernia humoralis, and other ordinary affections, we shall pass without especial notice, as the matter collected is less interesting than on the subject of "Wasting of the Testicles." Before, however, coming to this topic, we must, as an introduction, make room for the following observations on a

"Very interesting sympathetic affection of the testicles (which occurs in certain cases of cynanche parotidea,[*] when the pain and swelling abate suddenly, and the affection is transferred directly to the brain, producing convulsions and other dangerous symptoms, which occasionally prove fatal. This translation of the secondary affection to an organ of a different class from the one primarily affected, is a very singular deviation from the laws which regulate vicarious affections. Another remarkable peculiarity of this affection is the injurious effects of free evacuations, a practice naturally applied to a case characterized by all the symptoms of active inflammation. Yet it seems a fact well established by those who have had experience in this disease, that the copious detraction of blood brings on those dangerous attacks upon the brain, which admit of relief only by a discharge from one of the organs originally affected. This practice, with the most satisfactory result of relieving the brain from oppression, has been put directly to the test of experiment, by the application of blisters behind the ear, and to the region of the parotid gland. Blisters, indeed, have never, so far as I know, been applied to the testicles, though, from the striking analogy of circumstances, there is great encouragement to try the practice: for the spontaneous resolution of this sympathetic affection of the testicles is accomplished by a copious discharge from the surface of the scrotum; while the suppression of this discharge, either by exposure to cold, or by the application of repellent medicines, induces a translation of the attack to the brain, accompanied by the usual disastrous consequences.

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[*] "As the introduction of a stimulating fluid into the cellular membrane of the scrotum excites a high degree of inflammation, which occasionally proves fatal, the surgeon should be on his guard to avoid this accident by a careful management of the trocar and canula.

[†] "'Mumps,' in England; 'Branks,' in Scotland."

"Besides the above peculiarities, there is a distressing tendency in this sympathetic affection to cause a decay of the testicle. In these unfortunate cases, the decrease of the swelling does not stop when the testicle has been reduced to its natural size, but continues uninterruptedly till the substance of the testicle is completely wasted, nothing remaining but an empty bag, very sensible to pressure, or to any kind of irritation. There are very few cases in which there is only a partial reduction of size. I recollect but one instance of this variety.* M. Richter gives a very curious history of a kind of rheumatic swelling of the testicle, in which the cure was effected by the swelling subsiding below the natural size of the testicle; which, however, afterwards regained its healthy size. But this is a recovery which the patient has little reason to expect. The only well-authenticated case of this is given by Saviard, who, in performing an operation for the radical cure of hydrocele, found the testicle so completely shrunk as to be concealed between the folds of the tunica vaginalis. Upon the cure of the hydrocele, however, the testicle regained its original size." (P. 152.)

Wasting of the testicles, however, is occasionally met with, not as a symptom of any other cognizable disease, but as an idiopathic affection of the organ itself.

"Fortunately," however, (as our author observes,) "the decay of the testicle is not a disease of frequent occurrence, so that the information on the subject lies scattered over the works of surgical authors, few of whom have ever seen more than two or three cases of the disease. Baron Larrey is the only person I know who has had practice in it upon anything like an extensive scale, and his account of the disease is exceedingly interesting. After the return of the army from the Egyptian expedition, many soldiers complained of the disappearance of the testicles, without any venereal affection. The testicles lost their sensibility, became soft, diminished gradually in size, and seemed to be dried up. The attack, in general, began in one testicle at a time. The patient did not perceive this decay till the testicle was reduced to a very small size; it approached the inguinal canal, and was about the shape and size of a horsebean. It was indolent, and of a firm consistence. The spermatic cord itself diminished in size, and partook of the atrophy. When both testicles were affected, the patient was deprived of the faculty of procreation, of which he was apprised by the absence of all desire, and by the laxity of the parts of generation. This loss influences all the interior organs. The inferior extremities become lean, and totter under them; the countenance becomes discoloured, the beard thin, the stomach loses its tone, the digestion is impaired, and the intellectual faculties deranged. Several soldiers with this infirmity were invalided.

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* "Dr. Hamilton's paper upon Mumps."

"This complaint is ascribed to the excessive heat of the climate, the fatigues and privations of war, and, above all, to the use of spirits made from dates, in which different species of Solanum were infused. The ancients are said to have procured the atrophy of the testicles by the continued application to the scrotum of the inspissated juice of hemlock.

"When the atrophy is complete, art does not offer any resource; but, at its commencement, the distressing consequences may be prevented by the use of vapour-baths, dry friction over the surface of the body, urtication of the thighs, refreshing stomachic remedies, and good diet. A person may be secured against this accident by abstaining from the immoderate use of women and spirituous liquors. Since the return from Egypt, Larrey had occasion to treat this malady in many soldiers of the imperial guard, who brought it upon themselves by like excesses. In one person, this malady had, in a very short time, attained an extreme degree of malignity, insomuch as to make both testicles disappear almost entirely. The patient, who heretofore was of a robust constitution, with a thick beard and prominent features, lost all character of virility, and presented the appearance of an effeminate being; his beard was thin, his voice exceedingly feeble and shrill; his genitals without action, and incapable of generating. All means of cure proved ineffectual.

"Similar symptoms have been produced by deep wounds upon the nape of the neck." (P. 156.)

Will phrenology throw any light upon this latter consequence? Will deep wounds in the neighbourhood of the cerebellum impair its presumed functions in regulating the sexual desires, and, of course, the normal state of the subservient generative organs?

"Excessive venery is represented as an exciting cause of this atrophy; while, on the contrary, abstinence from all connexion with women, or uninterrupted continence, has been supposed to produce the same effect. There is nothing inconsistent with the laws of nature, in two opposite extremes destroying the functions of an organ; and this may possibly obtain in the case of the testicles, though the evidence of the fact is not, so far as I know, established upon a sufficiently extensive induction. Supposing it true, the case should not be so hopeless as the other variety, since, by encouraging the patient to employ the parts in discharging their natural function, if the disease be not confirmed, there is a probable prospect of recovery. In the case given by Saviard, the shrinking of the testicles was ascribed to the pressure of the fluid, and therefore did not indicate any radical defect in the testicle. In cases of hydrocele in which the testicle undergoes any change, it is usually that of enlargement. One other case of the diminution of the testicle in hydrocele is recorded, in which the surgeon removed the testicle, supposing it useless and irrecoverable. His practice, in this respect, was precipitate, since the result of Saviard's case gave sufficient encouragement to expect a favourable termination; at least, it would have been prudent to have watched the progress of the case with patience. The rashness of the surgeon in this instance demonstrates the advantage derived from an extensive and intimate acquaintance with the facts recorded by our predecessors, as this knowledge may enable us to treat a case judiciously, which otherwise might be regarded as quite new, and without any previous experience to regulate our practice.

"There is a solitary case, by Dr. Greenfield, of a patient with a decayed testicle, cured by the internal and external use of cantharides. The testicle had decreased to the size of a filbert-nut; but, after the cure, it had recovered its natural magnitude.

"The decay of both testicles is one of those melancholy catastrophes which makes a deep and indelible impression upon the mind of the sufferer. Unfortunately, too, it is one of those cases in which the interposition of art has not hitherto been able to afford any effectual relief; nor is the prospect of discovering any method of cure very flattering, as the cases occur too rarely to afford an opportunity of investigating the subject fully in all its bearings, so as to ascertain which mode of practice is the best. At present, therefore, we must regard decay of the testicles to be a disease beyond the power of art to remove." (P. 163.)

"The testicle has likewise been found completely wasted, after the termination of a tedious severe fever. In this case, there is not any intimation of the approaching evil given by previous alarming symptoms; it is accidentally discovered. I have had an opportunity to witness this form of the complaint, but do not know its nature." (P. 170.)

The remaining portion of the volume is occupied with observations on Neuralgic Affections of the Testicles, on Fungus Hæmatodes, and various other malignant and non-malignant changes which occur in these organs; and the work concludes with a short dissertation on the Diseases of the Spermatic Cord. Our notice, however, has extended to a greater length than we purposed, and therefore we abstain from making any further quotations, and close our analysis by recommending the work to the perusal of our younger brethren, especially students, who will find much valuable information condensed into a small compass, and detailed in concise terms.

A Treatise on some Nervous Disorders; being chiefly intended to illustrate those Varieties which simulate Structural Disease. By Edwin Lee, Member of the Royal College of Surgeons; formerly House-Surgeon to St. George's Hospital.—8vo. pp. 152. Burgess and Hill, London.

We have no doubt that every practitioner of mature age and experience must have met with cases of hysteria (as they are called), or of anomalous nervous maladies, particularly in young females, in which, upon a retrospection of the opinions he formed at the time of their nature and appropriate treatment, he confesses to himself that he was mistaken, and that he acted upon the principle of the existence of some positive structural disease, when, in fact, there was nothing more than general derangement of the nervous system. In truth, one of the most difficult duties that the medical practitioner has to perform, is to discriminate purely nervous disease from structural disease; and it is no less true that this duty is as important as it is perplexing; for, in most instances, when the subjects of nervous diseases are treated upon the presumption of their labouring under some local disease of structure, the treatment that is adopted not only fails to give relief, but very generally adds to the sufferings of the patient, and renders the diagnosis still more difficult than before the patient had submitted to medical interference at all. If it were our present purpose to write an essay, instead of to make an analysis of the work before us, we could detail very many cases, in which nervous and hysterical young females have been bled, and purged, and treated by strict antiphlogistic means, until their health was irremediably ruined, upon the mistaken supposition of their labouring under local inflammatory disease. The frequent occurrence of such cases has, within the last few years, led to their being more strictly investigated; and, if we cannot yet venture to declare that their true pathology is made clear, we have at least made one great step towards improvement, by having arrived at sufficient knowledge of the subject to enable us to determine, in most instances, with care and attention, that they are not really the diseases of which they so often assume the appearance. Many well-known writers have recently devoted their especial attention to this subject, and, amongst others, we may particularly mention Dr. MARSHALL HALL.* The medical periodicals also teem with cases of nervous diseases simulating structural disease.

In spite, however, of all the labour that has been bestowed upon the subject, much yet remains to be done, before we can flatter ourselves that we know enough of it to act with the confidence which arises only from certain and established principles. We are therefore grateful for any additional information that comes from such respectable authority as Mr. LEE, who, although he addresses himself more particularly to the junior members of the profession, may fairly claim the attention of old and experienced practitioners. He states that his attention was originally drawn to "cases of puzzling and intractable nervous disorder," by the observations made on them by Mr. Brodie, in his Lectures, and he has been induced to publish the present work, from having since witnessed, in several instances, the injurious consequences of nervous disorder being mistaken for inflammatory and organic disease.

Mr. Lee commences with a few observations on the nervous system of men and animals, and next enters into a brief inquiry of nervous disorders in general. Derangement of the functions of the nervous system is prevalent in proportion to the degree of susceptibility of the brain to impressions produced on it by external agents, or by the operations of the mind.

"This cerebral susceptibility rarely exists in a high degree while man continues in a low state of civilization. In proportion, however, to the increased exercise of the intellectual faculties, and to the progress made in the luxury and refinement of civilized nations, does the nervous system become more sensible to pleasing and painful impressions: the causes of nervous excitement become more multiplied, and a high degree of sensibility is engendered; which, while it enhances many of the enjoyments of life, at the same time predisposes to numerous diseases, from which the barbarian and the labouring man, occupied in his daily routine of mechanical employment, are exempt. The Romans, under the republic, enjoyed an exemption from nervous disorders, which forms a striking contrast with their prevalence among the same people in later times. In this country these complaints prevail, at the present day, to an extent unknown at any former period, or in any other nation." (P. 22.)

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* Commentaries on some of the more important of the Diseases of Females. —Longman, 1827.

It cannot be doubted, by any person who draws his conclusion from an attentive examination of different classes of society, that the modern system of education, which tends to the cultivation of the cerebral faculties in a degree disproportioned to the exercise of the bodily powers, is one of the chief causes of the nervous susceptibility becoming excessively developed; the prejudicial effects of which are more evident after puberty, and during the succeeding years of life, when the mental sensibilities are more directly called into action.. Civic life developes the nervous temperament and predisposition to disorder in a much greater degree than a residence in the country.

"Women, in consequence of the greater delicacy of their physical organization, and the high degree of nervous sensibility with which they are endowed, joined to their more sedentary mode of life, are easily and more strongly affected by agreeable or painful impressions; and, consequently, are much more subject to nervous diseases than men, who are comparatively exempt from various complaints to which the female sex are liable; but who, as life advances, become more subject to mental and nervous diseases, in consequence of their being more exposed to numerous sources of cerebral excitement, in the worry and turmoil of the world." (P. 25.)

"The influence of moral causes in the production of nervous disorder has not been hitherto sufficiently considered; hence this disorder is often attributed either to the effects which it occasions, or to any disease with which it may happen to co-exist. It is only in cases of mental aberration that due weight is ascribed to these causes in producing the disease. M. Georget, who has ably exposed the fallacy of some of the theories which refer nervous disorders exclusively to irritation or derangement of other organs than the brain, says, in alluding to this subject, 'If the stomach be irritated by improper food, many diseases may be occasioned; in like manner, moral causes may produce disorder of the sensitive and intellectual functions. The only occasions on which importance is attached to disturbance in the functions of the brain is when there is complete derangement; an individual may have insomnia, cephalagia, moral, intellectual, or muscular weakness, but if he is able to reason and follow certain ideas, it is said that the brain performs its functions healthily; but, on the other hand, if an individual experience loss of appetite and slight distaste for food, he is considered to be labouring under gastric disorder.'*

"Persons suffering from various nervous disorders frequently live to an advanced age, and retain an appearance of health, which would be incompatible with the existence of long continued disease of the parts to which the symptoms are referred. When disease or functional derangement of an organ remote from the brain co-exists with nervous disorder, it can generally be recognised by its characteristic symptoms; and, though rarely the original cause of the cerebral affection, it may react on the brain, so as to keep up and aggravate the nervous symptoms: where a high degree of susceptibility exists, it also frequently proves an exciting cause of relapses." (P. 29.)

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* "De la Physiologie du Système Nerveux."—Paris.

Nervous disorders, for the most part, are not accompanied by fever, nor followed by serious consequences. They vary greatly in their symptoms and progress, and are often of long duration; the symptoms being either constantly present, or recurring at regular or irregular periods. Some are productive of much suffering; while others do not occasion pain, and are felt merely as an inconvenience. In some cases, the symptoms frequently shift their situation, affecting various parts simultaneously, or in succession; at other times, they are concentrated towards some part in particular. Although, in general, capable of being greatly alleviated by medical treatment, they sometimes resist all the efforts of art, and either cease spontaneously, or become merged into some other disease.

The general observations Mr. Lee offers upon Hysteria are correct, as far as they go; he does not, indeed, profess to enter very deeply into the subject. He is opposed to the opinion of those, and that justly, who ascribe all hysterical complaints to some uterine derangement, and he thinks that the evidence that hysteria is essentially a disorder of the brain may be deduced from observation of its causes, symptoms, and of the remedial measures which are productive of the greatest benefit.

"In all cases, pain or other unpleasant sensations are referred to the head; the faculties of the intellect, of sensation, and voluntary motion, are more or less impaired. In almost every instance, the disease is induced by the agency of mental or moral impressions, acting either as predisposing, or as exciting causes; and, in the majority of cases, these are the sole causes which operate in producing the disease, the disturbance of the bodily functions being a consequence of the cerebral disorder. In those cases where hysteria is occasioned by local irritation of particular organs, the cause becomes in general apparent, and the disease usually subsides on its removal, as the following cases exemplify:

"'A young woman, æt. 26, in whom menstruation is always performed with difficulty, and scanty in quantity, being by no means proportioned to the quantity of blood circulating in the system, a plethoric state is occasioned. The day previous, or on the day of the appearance of the menses, she is generally attacked by headach, loss of appetite, cramps and pains in the epigastric and hypogastric regions, with sense of weight in the latter part; the legs and arms are debilitated to such a degree that she cannot sustain herself, she sheds tears, and is attacked by convulsions. On recovering, she is weakened and depressed, feels general indisposition for some hours, and sometimes experiences great pain until the menstrual secretion is established. When this has continued two or three days without intermission, she is entirely relieved, and recovers her health and strength until the following monthly period, when similar symptoms recur. Bleeding, leeches, baths, vegetable diet, relieve the patient, without curing her entirely."

"'A girl, æt. sixteen, in whom menstruation was regularly performed, was suddenly seized with convulsive attacks, which returned two or three times a week; she was aware an hour previous to the attack of its being about to recur. It commenced with slight shivering, and a sensation of cold vapor rising from the abdomen to the head; then succeeded loss of consciousness, with convulsive movements of the limbs. After trying various antispasmodic remedies without effect, a purgative was administered, which occasioned copious alvine evacuations, and the passage of two lumbrici; several others were subsequently passed, after which the patient was cured, and had no recurrence.'

"The remedies which are most effectual in mitigating and removing the symptoms, are those which have an immediate action on the nervous system. Such direct effects as are witnessed from the influence of the mind in the prevention of an attack, and on the progress and duration of hysteria, could only occur in a disease of cerebral origin." (P. 57.)

Mr. Lee passes much too rapidly over Epilepsy and Chorea, and we do not discover, in his comments upon these subjects, anything that could profitably arrest our attention, or be worthy our readers' notice.

In the second part, Mr. Lee treats on some special affections of voluntary motion and sensation, and on hypochondriasis.

Deranged Muscular Action, depending on Cerebral Excitement. "Fixed contraction of various muscles may be occasioned by the operation of the above-named causes, or it may supervene on some other form of nervous disorder. The degree of contraction varies according to the nature of the part implicated and other circumstances, it is sometimes so strong as to require the employment of much force to overcome the resistance. The efforts of the patient to overcome the rigidity are in some cases unavailing, but generally the patient retains more or less power of moving the part.

"The muscles of the superior extremity appear to be more frequently the seat of fixed contraction than those of the inferior extremity. The flexors of the elbow are often affected, this joint being maintained in a state of flexion or semiflexion while the patient is awake; but if the attention can be abstracted, the part will often become partially relaxed, and may be moved with comparative facility. The joint may sometimes be easily extended, but reverts to the flexed condition as soon as the extending force is withdrawn; at other times, the contraction is attended with pain, which any attempts at extension aggravate. In some cases, the skin of the part is morbidly sensitive to the touch. The fingers are also frequently contracted, the hand being held firmly clenched, particularly when attempts are made to open it, or when the patient's attention is otherwise directed to the complaint. This state is not unfrequently combined with contraction of the flexors of the elbow, or with other nervous symptoms.

"The muscles which raise the lower jaw are occasionally implicated, producing lock jaw more or less complete. When the muscles are so rigidly contracted as to prevent the introduction of substances into the mouth, considerable embarrassment is occasioned; no apprehension need however be entertained of the patient suffering materially from hunger or thirst, as when these sensations require to be allayed, sufficient relaxation will take place to allow liquids to be introduced. Wry-neck is sometimes produced from the muscles on one side of the neck becoming the seat of the contraction. Other parts of the body are also liable to this affection.

"The disorder is not in general of long duration, but relapses not unfrequently occur. In all its varieties, the affected parts become relaxed during sleep, and may then be freely moved. This circumstance will serve to distinguish the more obstinate cases from similar complaints of a purely local and more permanent character." (P. 73.)

The following case is given.

"An unmarried female, æt. twenty, was admitted into St. George's Hospital, in July 1827, having, two months previously, fallen and hurt her left elbow and hip. Considerable pain and discoloration of the elbow were caused by the accident, but subsided after the employment of a liniment. When received into the hospital, the elbow-joint was in a state of semiflexion, and the fingers and thumb firmly closed. While the patient was awake, manual attempts to overcome the contraction caused a kind of hysteric paroxysm. She complained of pain extending from the elbow to the wrist: this was aggravated by moving the forearm, and by lightly pinching up or tapping the skin. The sensibility of the skin in other parts of the body was also morbidly increased, but her general health was not impaired. Mr. Brodie, whose patient she was, prescribed the application of the spirit lotion of the hospital to the elbow, and the following medicine: Tinct. Valer., Ammon., Vini Aloes *aa* ʒi. sextâ quâque horâ ex aquâ.

"The patient feeling relieved by these means, they were continued, with the occasional employment of the shower-bath, for about a month; at the expiration of which period, the pain having entirely subsided, and the patient having regained the use of the elbow and hand, (the contraction recurring only for a short time at distant intervals,) she was placed on the out-patients' list." (P. 77.)

The case next related occurred in an hospital at Florence, and is a good illustration of the mistaken views which even experienced practitioners not unfrequently take of nervous disorders.

"Dec. 10, 1830. Three months ago, a girl, æt. seventeen, in whom menstruation was occasionally irregularly performed, but healthy in other respects, on descending into a close cellar, fainted, and fell to the ground. In falling, she struck her neck against some projecting body; abscess formed in the situation of the injury, was opened, and healed at the expiration of six weeks. Some days before her admission to the hospital, she lost the use of her left arm, and, shortly after, that of the left leg. The extremities of the right side subsequently became paralytic, and she was brought to the hospital in this state in the beginning of November. The intellect, the functions of respiration and digestion, continued unimpaired, as did those of the detrusor urinæ and sphincter ani muscles. The case was considered to be inflammation of the spinal marrow. Repeated bleeding, the application of leeches and blisters along the spine, low diet, the exhibition of strychnine, and the formation of a sore by caustic in the situation of the previous abscess, produced no amelioration.

"A fortnight ago, she suddenly heard of the death of a near relation; and from that time constant movements of the limbs succeeded to the state of paralysis in which they had previously lain. These movements have continued ever since; the arms are incessantly beating against the breast, the thighs and legs alternately bent and extended with violence. Though pale, her countenance does not indicate the existence of organic disease; the intellectual and vital operations are not impaired; she answers questions readily; the tongue is clean, the pulse weak. The prognosis delivered by her physician is unfavourable. She takes no medicine, but leeches are occasionally applied along the spine.

"I ascertained that the motions of the limbs, though constant during the day, did not prevent her from sleeping at night, at which period they ceased. They were more violent when any one approached the bed, and conversed with her, but, when she was not conscious of being observed, their violence was lessened, and they occasionally ceased altogether for a few seconds. The patient had the power of so far interrupting the movements as to put her hand to her head, when directed so to do, and to point to anything she wanted.

"From a consideration of the peculiarities of the case, and of its long duration, I was led to infer that, though the paralysis might have been occasioned by some irritation of the nerves, consequent on the healing of the abscess, the present symptoms did not indicate disease of the spinal marrow; that the complaint was essentially nervous, having great analogy with chorea, the motions of the limbs being, as in that disease, in some degree kept up by habit. This view of the case I communicated to her physician, who did me the honour to ask my opinion.

"Dec. 24th. The depletory measures have been discontinued, and the quantity of food increased, since the 14th. The patient has had, during the last two days, several hysterical symptoms; such as tremulous motions of the eyelids, loss of voice, occasional fits of laughter. The movements of the limbs are less violent, and at times cease altogether; she sleeps well, and her appetite is good.

"Dec. 30th. The patient, having been allowed a more full diet, is much improved in appearance; the movements are now almost entirely confined to the hands, and cease if her attention can be drawn off from her complaint.

"From this time she recovered rapidly, and was dismissed from the hospital in January." (P. 83.)

Deranged Muscular Action, dependent on Cerebral Torpor, or Debility. Under this title, Mr. Lee makes some good practical remarks on aphonia, retention of urine, ptosis, and paralytic affection of the extremities. The following curious case of paralysis of the lower extremities, of seven years' duration, is taken from Dr. BRIGHT's Reports of Medical Cases.

"'A delicate young woman, æt. twenty-four, was admitted into Guy's Hospital, Oct. 25, 1826. She had so completely lost the use of her lower extremities, that she was unable to walk a step without support. It appeared that this had been her condition for the last seven years. The catamenia had been obstructed about the time this complaint first came on, and for two years had not made their appearance. No disease could be detected on careful examination of the spine. She occasionally complained of pain in her temples, and the bowels were constipated. The medicines ordered, were directed entirely to strengthen her general condition, by bringing the stomach and bowels into better action, and the employment of counter irritation, both by ointment of tartarized antimony, and repeated blisters to the loins. For a long time, very little improvement took place, the catamenia, retained in sparing quantity, and attended by great dysmenorrhœa, but at length, when she had been seven or eight months under treatment, she became rapidly well, and left the hospital walking as if she had never been ill.'" (P. 99.)

Nervous Disorders affecting Sensation. The perception of impressions may be morbidly acute, or perverted, or it may be obtuse, or partially suspended. Moral causes operate greatly in effecting the perception of sensation, as do also over-exertion of the sensitive and intellectual faculties, visceral irritations, and general debility of the system. In the treatment of these affections, Mr. L. correctly states, that energetic depletory measures will not frequently be required. The mental and moral management of the patient will influence greatly the course and duration of the complaint.

"Increased sensibility of any part of the surface may frequently be occasioned by lightly pressing or pinching-up the integuments, from the attention of the patient being directed to the manipulation. The pain and tenderness to the touch, which are the leading symptoms, are however mostly circumscribed to particular parts; and hence resemble inflammatory, and other diseases of organs subjacent to that part of the skin to which the symptoms are referred. In consequence of the nervous affection being mistaken for structural disease, patients are frequently subjected to much injury from an improper mode of treatment. Some in whom the symptoms were referred to the back, have been confined to the horizontal position, and caustic issues kept open for months together, from the patient being supposed to be afflicted with spinal disease; others have been subjected to energetic depletory measures, under the supposition of inflammation existing in some important part. These diagnostic errors, even if productive of no other harm, keep up the disease, by increasing the nervous irritability of the system, while the treatment adopted tends to debilitate the patient, who is confirmed in the idea, from the length of time the complaint exists, unmitigated by the remedial means employed, that she is labouring under an intractable and incurable disease; hence there is less probability of altering the morbid perception of sensation in which the disorder consists, and unless some circumstance occur to divert the mind from the habitual consideration of the complaint, it may continue for almost an indefinite period, the remedies employed being only productive of palliative effects, until recovery spontaneously takes place, or until from long confinement and impaired general health some organic disease be induced.

"It is sometimes difficult to discriminate the nervous disorder from organic disease; the temperament of the patient, the course of the disorder, its peculiar symptoms, and the absence of febrile disturbance, will in most cases serve to distinguish it. It must however be borne in mind, that nervous affections are sometimes superadded to structural disease, which then acts as their exciting cause. The definite character of the symptoms of structural disease will in general make its existence evident." (P. 116.)

Different parts of the body may have their sensibility greatly increased, without structural disease. The knee is, perhaps, most frequently the seat of this nervous affection; and very often the disorder affects the breast in young women. It is often combined with tumor of the mamma, occasioning great alarm amongst the patient's friends, who are apt to regard it as of a schirrous nature. Sir A. Cooper describes this affection by the name of irritable tumor of the breast, and, as examples of it, Mr. Lee gives two cases.

"Case I. A young girl, æt. seventeen, was admitted into St. George's Hospital, on the 20th August, 1829, with painful tumor of the left breast. The tumor, hard, and of the size of a large filbert, had existed three years, but only became painful after an attack of fever, six months previous to her admission. The pain was not constant, but came on at intervals, more or less distant, being always increased by mental agitation. The skin covering the breast and surrounding parts was exquisitely sensitive when touched, the pain remaining several hours after the manual examination. Leeches and cold lotions were employed, without advantage. The patient's general health was good, and menstruation regular. She was ordered a belladonna plaster to the painful breast, and the following draught every six hours. ℞. Mist. Camphoræ ℥i., Decoct. Aloes comp. ʒiij., Tinct. Humuli ʒi. These measures relieved the pain and morbid sensibility of the skin; they were continued for about three weeks, when these symptoms having entirely subsided, and the tumor being somewhat diminished in size, the patient was discharged.

"Case II. A young girl, æt. twelve, was received into St. George's Hospital, in October 1829, having a tumor, of the size of a walnut, in the left breast, which came on attended by fever two years previously, and attained the size of a small orange, but had since gradually subsided. At the time of her admission, the tumor was occasionally painful; the pain recurring at irregular periods, extending down the arm of the same side, and lasting about ten minutes each time. The skin of the breast and its neighbourhood was morbidly sensitive to the touch. These symptoms had, however, existed only since the month of June. The general health was good, and the sleep undisturbed. The employment of antiphlogistic means had not been attended with advantage.

"She was ordered to take, every morning and noon, Vini Ferri et Vini Aloes *aa* ʒi. ex aquâ; and the following embrocation to be rubbed on the breast twice a-day: ℞. Linim. Camph. ʒiss., Tinct. Opii iij. M. fiat embrocatio. At the expiration of a week, the symptoms were greatly alleviated, and she was transferred to the out-patient's list." (P. 134.)

Pain and preternatural sensibility of the skin often affect the back, especially some part along the course of the spine, and the disorder is liable to be mistaken for spinal disease, if attention be not paid to the diagnostic marks. This, Mr. L. remarks, is the more likely to happen as the affection is frequently attended by debility, more apparent than real, of the lower extremities, particularly if the patient have been long confined to the recumbent position.

"The pain is sometimes diffused over a large extent of surface, but is more frequently limited to some point of the spine, and is aggravated by pressing on the part, or by lightly patting and pinching-up the skin. The morbid sensibility is not however confined to the part to which the pain is referred, but is in general more extensively diffused over the back, and occasionally affects at the same time other parts of the body, the patient complaining of pain being induced by the slightest touch. The pain is not always confined to the same point, but shifts its situation, and is often absent altogether for a short period. The patient sometimes complains of weakness in the loins when attempting to stand or sit upright. The symptoms, however, vary at different times, the patient being on some days better, on others worse. The general health is not materially impaired, and the sleep is not disturbed by the complaint, which is occasionally of long duration, without any increase in the severity of the symptoms.

"The diagnosis between this disorder and spinal disease is easy. In spinal disease, the pain, when present, is fixed to one point, and requires pretty firm pressure on the part to increase it; while, in the nervous affection, it is more variable, and shifts its situation. As disease of the spine advances, the patient's appearance becomes altered, fever supervenes in most cases, the limbs become paralytic, abscess frequently shews itself in the loins or groin, and projection of one or more of the spinous processes will be perceptible when the dorsal vertebræ are affected. The morbid sensibility of the skin to the touch is not, in general, present in spinal disease: I have however seen in one case this symptom co-exist with disease of the spine, in which there was manifest projection of the spinous processes of two dorsal vertebræ, and a paralytic state of the lower limbs; the skin of the back, breast, and abdomen, was acutely sensitive. The patient was a female who had formerly been subject to hysteria. (P. 136.)

"A young woman, whose countenance indicated good health, was admitted into St. George's Hospital, in the beginning of April 1829, complaining of acute pain in the small of the back, which had existed, with occasional intermissions of three or four days, for three years and a half. It was sometimes transferred to other parts of the back, and was aggravated at her monthly periods; menstruation was otherwise easy and regular. She had been salivated by mercury, and confined to the horizontal position for twelve months, during part of which time a caustic issue was kept open on either side of the spine.

"Though her general health was unimpaired, she was unable to stand without support. Pressure on any part of the spine occasioned pain. The skin covering the spine, and in other parts of the body, was morbidly sensitive to the touch. She could move the legs freely when lying or sitting down, and her sleep was undisturbed. She was ordered to take, three times a-day, Spirit. Ammon. comp. ♏x., Misturæ Camph. ʒx.; and was allowed to get about the ward on crutches.

"At the expiration of a fortnight, she considered herself to be better, and had gained more strength in the legs. The medicine was continued, and a large blister applied to the loins.

"In the beginning of May, the pain and sensibility of the skin were greatly mitigated; the patient made great objection to the blister, which she requested might not be repeated: a fresh blister was nevertheless applied, and the same medicine continued.

"A third blister was applied after a few days; and, in the middle of May, the patient was dismissed the hospital cured, being able to walk without any other assistance than a stick." (P. 139.)

BIBLIOGRAPHICAL NOTICE.

Sketches from the Case-book, to illustrate the Influence of the Mind on the Body; with the Treatment of some of the more important Brain and Nervous Disturbances which arise from this Influence. By R. FLETCHER, Esq., Surgeon to the Glocester General Hospital, &c.—8vo. pp. 391. Longman, London.

UNLESS we are mistaken, there are many who suppose that a reviewer feels a secret satisfaction in "cutting up" the works that fall under his notice; but we can declare most conscientiously for ourselves, that there is no duty more irksome to us, none more painful to our feelings, than that of commenting with severity upon the labours of others. Disagreeable, however, as the duty is, it is imperative upon us, as honest journalists, and it must be performed.

We derived so much pleasure and instruction from the perusal of Mr. FLETCHER's former works, that we approached the consideration of the present with our minds made up in his favour, and with a feeling amounting almost to a conviction that we should again have to offer him our meed of approbation, and afford our readers the opportunity, by a long analysis, of judging for themselves of the justice of our critical decision. We cannot, however, either bestow the smallest portion of praise upon the present work, or occupy our pages by any lengthened extracts from it.

The title naturally led us to look for some practical information; and we had previous reasons for believing that Mr. Fletcher's good taste would ensure us a proper seriousness of diction, and an appropriate gravity of style, in the discussion of a serious subject. But of practical information we can find very few traces; and nothing can possibly be more extravagantly trifling than the style in which the book is written. One or two examples will suffice to shew that we have "reason for our saying."

In commenting upon the regulation of diet, at page 194, Mr. F. tells us, that "fat, pure fat, and melted butter, (according to books, the greatest enemy a weak stomach can encounter,) will sometimes, most disrespectfully and spitefully to the learned authors of the said books, sit scornfully triumphant in the legitimate habitation of water-gruel!" "Mutton-chops, so famous in the treatment of the dyspeptic stomach, must now hide their stale insignificance in the presence of sliced fat bacon, which, with conscious pride of its superiority, is found upon every breakfast-table, proudly curled up in bold and impudent convexity, and ready for a start over the now neglected form and fallen fortune of the mutton-chop!" This is at least very original; for certainly nobody ever before heard of the "conscious pride" of a rasher of bacon, or ever suspected that it could be "ready for a start" over a mutton-chop.

Mr. Fletcher's grand mode of relieving mental affliction appears to us as whimsical as the terms in which he conveys his opinions. From whatever source the mental malady proceeds, the patient is to compose himself by *composition*. Is he melancholy, or three parts mad, he is to be cured by writing about any thing, or nothing. No matter whether he has taste or talent for the occupation, he is to write, and write again, and ere long he will himself be right.

We shut the book, with deep regret that Mr. Fletcher ever wrote it; but not without hopes that he will again come before the profession, and again claim the approbation of his brethren, by some performance which will not diminish the reputation he fairly acquired by the publication of his "Medico-chirurgical Notes and Illustrations," of which we thought so favorably, that we not only gave a full analysis of it, but extracted several of the cases for our Collectanea department.

REPORTS
FROM HOSPITALS AND MEDICAL INSTITUTIONS.

To the Editors of the London Medical and Physical Journal.

GENTLEMEN: Should the following cases, which I met with in the course of my reading, illustrative particularly of the physiology of the cerebellum, be suited to your pages, I shall feel obliged by your inserting them this month.

I am, sir, your obedient servant,
W. HALEY HOLM,
55, Norton street.

AVIGNON HOSPITAL.

Satyriasis, consecutive to a Blow received on the Occipital Region.

By M. CHAUFFARD, Medicin à Avignon.

THE following account has appeared to me instructive and remarkable, at this time particularly, when the multiplicity of the organs in the cerebral mass is studied with as much delicacy as success. The occurrence took place at Avignon, a few months ago, and was related to me by the medical attendant of the man.

Charvet, fifty-five years of age, of mild manners, of peaceable character, and of great devotion, fell down in his chamber, and struck the neck violently against one of the bed-posts. Puffiness of the inferior occipital region, and after singular alteration of the habits of the patient, followed. He is seized with a violent and continued satyriasis, and with such salacity, that he pursued beyond measure his wife, his daughters, and all those females who came in his way. This man, formerly so pious, so modest, fell into the most erotic delirium, and abandoned himself without measure to proposals and acts the most indecent. This state increased for about three months, during which time his mind and strength became weakened; when, following a violent passion, which was occasioned by the refusal of his wife *lassato viro et satiata*, he fell into a convulsion, and complained, in consequence, of an acute pain in front of the summit of the head, (where the religious feelings are situated,) and did not feel again that which he had experienced at the posterior inferior part of the cranium. Paralysis of the left side came on, cessation of the satyriasis, and erotic delirium; religious mania, continual muttering of prayers, &c. These phenomena continued till death, which occurred eight days after this change of the morbid symptoms.

The body was not opened. These facts being thus incomplete, I cannot draw any positive conclusion, but leave it to the reflection of intelligent physiologists and learned men, who do not deny without examination the beautiful researches of Gall and Spurzheim. For the future, for the progress of their science, it will be necessary to observe attentively the state of the encephalic mass in these cases, in the different sorts of mania and other maladies intimately connected therewith, according to the phrenological doctrine, with suffering and derangement of function of each special portion of the brain.

We shall probably find exact relations between cerebral lesion and phenomena, which have appeared lately quite independent, and which in reality have no other cause. If the violent blow received by the patient, of which I have succinctly related the history, did not produce a special alteration of the function of the cerebellum, and if the cerebellum do not preside over (the function of physical love) amativeness, how otherwise can the sudden manifestation of this extraordinary satyriasis be accounted for?

With regard to the religious delirium, which supervened a few days before death, this, according to all appearances, is the rational explanation. Following strong excitement, congestion, and probably cerebral hemorrhage, injection of the encephalic substance, exaltation of sensibility of the organs, which in the natural state was predominant, and that most frequently in exercise; injury sufficiently indicated by the coincidence of pain at the middle part, posterior and superior to the coronal, with exaggeration of the habitual religious sentiments of the patient.

All the treatment he underwent were some trifling drinks, and the application of two leeches to each temple three days before death; which application was followed by considerable subcutaneous œdema, and exasperation of the symptoms.

This cause of satyriasis, and of erotic mania, has been very accurately noticed by many other authors besides Gall and Spurzheim. "Considerable wounds in the neck, blows which have only glanced upon this part," says Bischoff, "have been followed by inflammation of the genital organs."—*Exposition de la Doctrine de Gall, traduit de l'Allemand, par Barbegniore*, page 84.

"The material condition of satyriasis resides in the encephalon; and in all cases its disorderly manifestation corresponds either with the natural strength and preponderance of the cerebellum, or to circumstances which, at the moment actually of the disease, have put it violently into action."—*Voisin, des Causes, Morales and Physique, des Maladies Mentales*, pp. 275-6.

The conclusion from these observations is, that satyriasis, priapism, inflammation of the sexual organs, not proceeding from external violence, particularly when these phenomena coexist with erotic delirium, ought not to be treated exclusively by antiphlogistics applied to the genital organs; but there should be associated with these measures treatment appropriate to the morbid activity of the cerebellum.

This has been done with success in several instances; and M. Voisin, particularly, has assembled in his work a series of cases conclusive on these various points. The strong disposition to excitement of the sexual organs in hydrocephali, when the cerebellum is, of all the parts of the brain, the least altered, has been given by Gall, and other anatomists, as a proof in favour of the opinion of the function of this part of the encephalon. I recollect having seen, about eleven years since, in Paris, a hydrocephalis, between fourteen and fifteen years of age, with a large head, who was guilty of masturbation to a great extent.

In 1833, when accompanying the prefect in the departmental circuit, for the examination of young persons set apart to be reformed, a herdsman of a robust form, with red beard and hair, of an infectious smell, took off his clothes, suffering from a disease which he dared not name. This was in November, in cold weather, and in a large and cold room. Scarcely was he stripped of his clothes, though before the penis became erect, his face reddened, eyes troubled, quite confused, turning the back to us, and unable to avoid this monstrous satyriasis. This state of priapism continued without relief after the spermatic secretion had taken place, and involuntary startings also; otherwise he had a heavy appearance, but answered reasonably.

This unfortunate fellow complained of being tormented with continual erections and seminal emissions; he had contracted the same habit as in the case above mentioned. He was cured. The neck was short, and the back part large and thick; the posterior portion of the occiput very wide, and consequently the cerebellum region of the cranium very much developed and predominating.

Hydrocephalus, with Tubercle and Polypus in the Cerebellum, in a Child of Four Years of Age. By Dr. Guillet, of Niort, Department des Deux Sevres.

James Philip Cardinal, a seven months' child, presented at birth a very wasted appearance, and his limbs were as though atrophied. Immediately after the birth, I remarked a projection very distinct over the fontanelles, as in cases of hernia cerebri During life this child always continued weak, puny, and the prey of a slow and continued fever. From the third and fourth month there was frequent epistaxis, progressive predominance of the head over all the other parts of the body; tardy dentition, (at thirteen months only the first incisors began to appear.) This period of life was not passed without various attacks; diarrhœa, nervous tremblings of the limbs, general convulsions, swelling of the cervical ganglions, &c. Towards the second year, in proportion as perception developed itself, it was remarked the child sought always a position to rest the head, and, when he was deprived of it, he supported it with one of his hands. In order to look to the right or left, he could not rotate the head on its axis, but was obliged to turn the whole body, as those do who are wry-necked. At two years of age the head was larger than that of an adult, the sincipital region very much flattened, and it presented laterally an enormous bulging out.

At three years, he fell down, and the head received the principal shock. From that time he uttered plaintive cries, and there was acute and continued pain in this part of the body. He had no inclination to exercise the body, nor did he mix with the children of his own age, but was taciturn and morose, and remained always either sitting or lying down. When the animal life commenced losing its activity, it was not so with organic life; for he ate and drank very well. From the time of the fall the convulsions came on much more frequently; one day, during one of the convulsions, he vomited some lumbricales.

Four months after the fall, he was suddenly struck with hemiplegia of the left side, to which he ordinarily inclined the head. The arm and leg of this side were entirely without motion, and the tongue participated in the paralysis.

In speaking, each word was interrupted by a moment of silence, as though an interval of repose was necessary for the brain. A few days after he became suddenly blind; the pupils were dilated, immoveable, and the eyes a little dull. At three years and a half, paralysis became complete in the lateral parts of the body; the right hand was the last part attacked. There was an extreme contraction of the fingers. The bladder also was paralysed, and incontinence of urine followed.

Reduced to such a deplorable state, this child remained sometimes forty-eight hours without wishing to take nourishment, nor even drink.

On coming forth from this extreme indifference for all that related to the wants of life, he gave proofs still, by some words imperfectly articulated, by signs or by cries, the desire to take food.

Five weeks before his death, the faculty of hearing, which until this time had still existed, was totally annihilated. Thus, neither motion, sight, speech, nor hearing, was left; he only uttered a faint cry. He took merely sugar and water for nourishment. Following numerous convulsions, which increased each day, came on complete immobility and tetanic stiffness. At times the child appeared to recognize me, for he could still form a confused judgment, without doubt, of the position in which he was placed: if the mother placed him on the bed, immediately he uttered plaintive cries; if she took him in her arms, immediately the cries ceased. He died September 12th, 1832, in a violent convulsion.

The post-mortem examination was made twenty-four hours after death. The rigidity of the body extreme; superior and inferior extremities strongly contracted; fingers of the left hand so bent into the palm, that the skin of this part had been excoriated by the nails; general emaciation; (thus this child had lived at the expense of his own substance for some time;) eyes dull and deeply sunk in the orbits; pupils retracted; crystallines opaque; cheek-bones very prominent; in short, the hippocratic face.

Total volume of the head enormous; its form that of a sphere flattened at the sinciput, little developed in front, and very prominent laterally.

The fontanelles extended an inch and a half in their transversal diameter. On opening the cranium, I found the dura mater become a fibro-cartilaginous tissue, whose resistence opposed the formation of hernia cerebri. When the scalpel had penetrated this membrane, there ran out about two ounces of serous limpid liquid. The blood-vessels which ramified on the cerebral hemispheres, as well as those which went to ramify in the cerebral substance, were gorged with blood. On pressing lightly the two lobes of the brain, we felt the fluctuation of a liquid poured out in the lateral ventricles. After having opened these two cavities, I made the following remarks: The cerebral substance was of its natural consistence; the ventricles, whose walls were of a white faded colour, were found enormously increased at the expense of the superior parts of the lobes of the brain; these cavities contained a serous and very clear liquid, of which the quantity amounted to fourteen ounces; the optic thalami (great posterior ganglions), corpora striata (great anterior ganglions), the cornua ammonis, and the plexus choroides, were developed in a direct ratio to the extent of these cavities.

In the left lobe of the cerebellum was found a tubercle of the volume of a pullet's egg, of a rounded form, and of a yellowish-green colour; its tissue externally hard, softened at the centre. This casual production, developed at the expense of the substance of the cerebellum, (for it replaced all the anterior part, which was positively wanting,) was immediately in contact with the meninges.

In separating the brain from the spinal cord, I found, resting on the basilar surface of the sphænoid bone, a polypus, of the size of a walnut, adhering to the cerebellum, and which I was able to crush between the fingers. The left portion of the cerebellum presented nothing worthy of note.

This case, which is not certainly new of its kind, appears to me to offer some interest with relation to the coincidence of the divers organic alterations which it presents, and after that of the march of the phenomena which were the result of it. Serous secretion, tubercle and polypus of the brain; such the nature of the affection: perversion, uneasiness of inervation, convulsions, progressive paralysis, and death; such were the consequences.

In many cases of cerebral apoplexy, (there even where pathological anatomy has done nothing to discover any thing appreciable to our senses,) where the patients are suddenly as it were struck with lightning, the observing physician has had reason to be astonished in seeing such subjects drag on their existence for whole years, in which there has been a series of disorders as marked as in the case before us.

It would be very difficult to conceive, if the symptoms were always in relation to the extent of lesion, that this unfortunate child had been able so long to sustain a vegetative life, in which the greater part of the sensorial organs have been successively struck as with death in detail. In waiting on this point for satisfactory explanations, we are obliged to acknowledge that in certain diseases there reigns much obscurity on the relation of the symptomatic effects with their morbid causes.

GLASGOW ROYAL INFIRMARY.

Carcinoma of the Rectum; Operation; Recovery.

Alexander Campbell, aged twenty-eight, admitted 14th November, 1832. Extending for nearly an inch around verge of anus is a circle of unhealthy looking ulceration, having high everted edges, and a rough, callous surface, discharging copiously a thin unhealthy matter. On going to stool he experiences great pain, and there is occasionally a slight discharge of blood; and, when the fæces are liquid, they frequently pass out involuntarily. General health seems somewhat impaired. Complaint is of a year's duration, and began with what seems to have been external hemorrhoidal tumors, which were excised by a surgeon. The cut surfaces, however, did not heal, and sore has gradually attained its present appearance. A suppository of hemlock and opium to rectum night and morning. Solution of chlorine to external ulcer.

9th December. Suppository produced considerable relief from pain, but the appearance of the external sore has been little altered by the lotion. No improvement in general health. Countenance sallow, lips palid, pulse 106, weak. By advice of consultation, the following operation was performed for removal of diseased parts.

The patient being placed in the ordinary posture for lithotomy, and the urine having been previously discharged, a sound was introduced into bladder to elevate the prostate gland. An incision embracing diseased parts, and extending through skin and considerable part of cellular substance, was then made. Anteriorly the gut was separated from its surrounding connexions by cautious dissection; laterally and posteriorly the knife was passed up the depth of the disease, and its point made to penetrate the walls of the rectum. It was then carried round a considerable portion of the circumference of the gut, guided by the finger introduced into the rectum. The greater portion of the disease being thus removed, it was found that several parts of diseased intestine still remained behind. These were subsequently dissected out along with several glands, which lay internal to the skin, and were enlarged and indurated. Their cellular connexions being pretty strong, they were removed by the finger with some difficulty. Still more difficulty was found in removing some which were firmly adherent to the right lateral lobe of prostate gland. The diseased parts were in this manner removed as far as could be ascertained. The interior of the rectum felt smooth, and its walls soft and pliable. A considerable quantity of blood was lost during the operation; and this escaped from an infinity of small vessels, the greater number of which speedily retracted, a single vessel only requiring a ligature. At one time during the operation there was an approach to syncope, but the pulse never disappeared at the wrist. The cavity formed by excision of diseased parts was filled by several pieces of sponge, and a compress applied externally, supported by a T bandage.

A short time after removal to bed, says he feels little pain, and his sensations do not differ in a material degree from what they were previous to operation. Pulse 116, rather feeble.

10th. Was restless during the night, and had great thirst. Fluid taken into stomach immediately rejected by vomiting. These symptoms were relieved by effervescing draughts, and the application of turpentine to region of stomach. At present skin is hot, but has had no rigor. Is free from abdominal pain, and can bear any degree of external pressure. Thirst less urgent. No nausea nor tendency to vomit. Has passed urine freely, and without pain. Pulse 144, rather sharp. On removing dressings, sponge found to have distended the wound, being every where firmly adherent to its surface. Slight pain, but character of pain changed. No surrounding inflammation. No stool. Half an ounce castor oil immediately. Thirty drops vin. antim every third hour. Oiled lint to wound.

12th. Size of wound appears to diminish, and its surface is coated over with a lymphatic exudation. No redness nor swelling of surrounding integuments. Says he feels much relief from pain since operation. No abdominal uneasiness, and no return of vomiting. Discharges urine freely. One copious evacuation from bowels without pain. Skin cool. Tongue clean and moist. No thirst. Pulse 128, rather feeble. Appetite deficient. ℞. Sulph. Quiniæ ʒss. Acid., Sulph. Aromat. ʒij., Tinct. Gent. comp. ℥ij. Aq. Pur. ℥viii. M. fiat mistur. cujus sum. coch. max. 4ta qq. horâ.

14th. No pain in wound, and no surrounding inflammation. Improves somewhat in strength. Bowels regular. Pulse 118. A beef-steak and pint of porter daily.

22d. Strength recruits. Sleeps well. Countenance cheerful. Is free from pain. External wound diminishes, and denuded parts begin to be covered with a thin pellicle of skin. Is still unable to retain his fæces. Pulse 108, of moderate strength.

During the month of January he continued to improve, and the wound went on contracting. It was necessary to introduce a bougie frequently to keep the rectum patent, there being a disposition in the parts to contract more than was desirable. Early in February, without any evident cause, he had an attack of abdominal irritation, preceded by rigors, and accompanied with smart pyrexia and considerable pain of hypogastric region. These symptoms required leeches, laxatives, and effervescing draughts, by which they were subdued. The wound is now nearly healed, but the bougie has still to be employed, to prevent too much contraction. The fæces can be retained, except when they are very fluid, in which case a small quantity sometimes escapes involuntarily. His general health is now tolerably good, and I expect to dismiss him in a short time, cured.—*Glasgow Medical Journal.*

RATHKEALE INFIRMARY.

Cases of Hemeralopia. By Dr. Patterson. [*Dublin Journal of Med. and Chem. Sciences.*]

Case I. James Dwyer, aged nineteen years, applied at the Rathkeale Infirmary, the 9th September, 1831. He complained that every evening at dusk he became almost blind, and continued so till sunrise next morning; that he could see very imperfectly by fire or candle light, and that exposure to heat and active exercise, or labour, always considerably aggravated his inability to discern objects at night. He stated, that in candlelight, however vivid, he could distinguish no object that was directly opposite to him. He could see a little in an oblique direction, and this enabled him, with much difficulty, to grope his way. The pupils were permanently and very much dilated. "He felt stupid and confused in his head." There was great fulness, hardness, and some tenderness of the right hypochondrium; conjunctiva yellowish; alvine evacuations white. Early in May, 1831, he was attacked with jaundice. He did not get rid of it for a month, and, while labouring under the disease, he first noticed the derangement of sight. This continued, with only daily intermissions, up to the period of his application.

Having been bled, blistered, and purged, with little effect, he was directed to rub in one drachm of strong mercurial ointment every night, and, as soon as this had affected the constitution, recourse was had to the nitro-muriatic acid bath. The moment the gums became tender, he experienced a manifest improvement of his sight. But at this time he complained, for a few days, that exposure to artificial light produced most unpleasant sensations in his eyes. Under the treatment, the hepatic disorder was quickly and effectually relieved, and with it the amaurotic affection entirely disappeared.

CASE II. In November, 1831, Patrick Mangan, aged thirty-two, applied for relief, and stated that, "about six weeks before, he was affected with jaundice, which continued for eight or ten days, but having been badly cured, it fell on his eyes. Ever since he is unable to see any object at night, however bright it may be; neither can he see in a lighted room." There was pain and fulness of the right hypochondrium; dilated pupils; yellow tinge of the conjunctiva; and high coloured urine with pink sediment.

He rubbed in Ung. Hyd. fort. ℥i. every night, used the nitro-muriatic acid bath, and took an occasional dose of calomel and cathartic extract at night, followed by infusion of senna and sulph. magnesiæ in the morning. Through these means his amendment was rapid. In ten days he was able to read the smallest print by candlelight, and became entirely free from hemeralopia.

CASE III. The 14th December, 1831, James Wynn, aged eighteen years, became a patient at the Rathkeale Infirmary. He complained of languor and loss of appetite. Skin and conjunctiva yellow; alvine evacuations white; urine high-coloured, resembling beer; no pain of side or epigastrium on pressure. He first noticed the yellowness of skin three weeks before his application, and from that period, he stated, he was regularly attacked with almost perfect blindness at dusk every evening. It continued the whole night, and disabled him from going about, unless led by some person. His sight was natural in the daytime. Objects did not even appear of a yellowish hue, as they have been said to do to jaundiced patients. The pupils were very much dilated; bowels costive.

His bowels were briskly moved every morning for five or six days, by pulv. jal. comp. and calomel, with the effect of diminishing the jaundiced state of the skin, but without the least benefit to his nocturnal loss of vision. Recourse was then had to the constitutional effects of mercury; and the system having been brought under the influence of that mineral, he completely recovered his usual acuteness of sight, in discerning objects at night.

In the present year, I have also met with other cases of hemeralopia, but they were much slighter in degree than those which have been related. The subjects were generally males. Two were at the time labouring under slight jaundice of a few days' continuance. The others had lately recovered from a similar affection. In all these cases the nitro-muriatic acid bath was employed; and, as it was found effective in producing permanent cures, no attempt was made to induce mercurial constitutional action.

Since my attention has been directed to the connexion which appears to exist between hemeralopia and jaundice, I have observed, in every case of the latter complaint that has fallen under my observation, more or less tendency to the former affection. In all there existed preternatural and fixed dilatation of the pupils; and when questions were put concerning the state of vision, in most instances, complaints occurred, in some degree, of its nocturnal impairment.

COLLECTANEA.

PATHOLOGY.

On the Pathology of Purpura Hemorrhagica. Extracted from a Paper by George Gardner, Surgeon, Glasgow. [*Glasgow Med. Journal.*]

Mr. Gardner first gives a slight sketch of the various opinions which have been entertained by different pathologists respecting the disease in question; and then adduces the following cases, for the purpose of shewing that it is of an inflammatory nature, and that an antiphlogistic method of treatment is the only one from which any real advantage can be derived.

"In two cases, related by Dr. Parry, of Bath, both had decided symptoms of inflammation. The first was that of a lady, fifty years of age, of a fair complexion, and rather full habit, who for some days had laboured under slight febrile symptoms, with a full pulse, though but little thirst or fur on her tongue. Her skin was thickly covered with spots, small, and of irregular forms, not raised above the surface, of a dark logwood colour, and in no degree evanescent on pressure. Previous to Dr. Parry's first visit, she had been seen by an apothecary, who took ℥xiv. of blood from her arm. The blood was seen by Dr. Parry. Its surface consisted of a crust of coagulated lymph, as thick and tenacious as he ever witnessed in the most acute cases of rheumatism, pleurisy, or hepatitis. The cruor was also very firm and cohesive, and difficult of diffusion when shaken in the serum, and the proportion of crassamentum to that of the serum was very great. The patient expressed so much relief from the bleeding, that he thought himself justified in ordering it to be repeated. Relief was by this means obtained; and, under the use of some common refrigerants, she quickly recovered.

The second case was that of an officer whom he attended in conjunction with Mr. Atwood. The patient had been rather a free liver, and was suffering under considerable fever, apparently connected with inflammation of the testicle. The pulse being very hard and strong, the heat great, and the urine high coloured, Mr. Atwood was desirous of taking away blood, but was deterred by numerous petechiæ which appeared in the skin. Satisfied, after comparing this with the former case, that no hazard would arise from bloodletting, they agreed that the operation should be performed. The first bleeding afforded instant relief; and, after a second, the pulse was reduced to its natural state, the spots gradually disappeared, and the petechial disposition entirely ceased. The blood drawn had precisely the same appearance and tenacity as in the former instance.

"After relating these cases, Dr. Parry observes, that they strengthen an opinion which he had more than twenty years ago maintained, and which a large subsequent experience had tended to confirm; that in various diseases, among which may be reckoned inflammations, profluvia, hemorrhages, dropsies, exanthemata, and other cutaneous eruptions, and even the generality of nervous affections, there is one circumstance in common, which is an over distention of certain blood vessels, arising probably from their relative want of tone, or the due contraction of their muscular fibres.*

"A very striking case occurred to Dr. Bateman, at the Carey-street Dispensary, London. The patient was a feeble woman, about forty years of age. After fruitlessly taking bark and sulphuric acid for some time, she was slightly, but repeatedly, relieved by purgatives of calomel. After which her languor and weakness were diminished; but the petechiæ, which occurred principally on the extremities, were suddenly and finally removed, and her strength speedily restored, after a severe catamenial flooding. Dr. Bateman remarks, that this case, added to the two related by Dr. Parry, 'tend to throw a doubt upon our theories on the nature of petechial effusions.'†

"In a case which happened at the Edinburgh New Town Dispensary, the patient was a lad seventeen years of age; his diet had been meagre, and he had been accustomed to work in a cold and damp room. It was that form of the complaint which Dr. Willan calls purpura urticans. The eruption had the form of small hard purple coloured papulæ, intermixed with petechiæ; they occupied the ancles, knees, buttocks, and elbows. There were pains in these joints, accompanied with stiffness. An abscess which had formed on the parietes of the thorax, and had discharged itself three weeks before, had a dark purple colour, and was discharging a bloody sanies. When first seen he had much debility, and his countenance was extremely sallow, and expressive of languor. Pulse eighty-four, skin cool, tongue clean, and appetite tolerable. The petechiæ made their appearance suddenly, and were preceded by distinct rigor and febrile symptoms. The swelling and pain of the joints were abated by the use of purgatives; but, shortly after their operation, severe pain, with fulness and hardness of the abdomen, supervened, accompanied by vomiting and hiccough, full pulse, and foul tongue. These symptoms were relieved by bleeding to ℥xij.

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* Ed. Med. and Surg. Journ., vol. v. p. 7. Many other cases, illustrative of the inflammatory nature of purpura, will be found in Dr. Parry's Posthumous Works, vol. i. They are there denominated inflammatory petechiæ.

† Edinburgh Med. and Surg. Journal, vol. vi. p. 124.

but recurred after two days in an increased degree, requiring three additional bleedings, each to ℥xiv., and the application of two blisters, before they were completely subdued. He bore the bleedings well. The coagulum was firm, and covered by a buffy coat of considerable thickness. In about a week after the first bleeding, the skin had regained its natural appearance, and the discharge from the abscess on the chest became healthy.*

"The peculiarities of this case appear to be, in the first place, the fact of the appearance of the petechiæ being ushered in by 'distinct rigor and febrile symptoms.' In the second place, the great quantity of blood taken for the reduction of the peritoneal inflammation, especially when the state of debility under which he previously laboured is taken into consideration. In the third place, the disappearance of the petechiæ shortly after the depletory plan had been put in execution, proving that the use of the lancet is as necessary for the dispersion of petechiæ in those who are labouring under great debility, as in those who are of a full and plethoric habit, and that nothing is to be feared in such cases from its use.

"On the 23d May, 1831, I was called upon to visit a young man, aged about seventeen, a silk weaver. He had a pale and exsanguineous appearance, though not much emaciated, and complained of much debility, accompanied with pain of head, lumbar region, and extremities. His neck, breast, and extremities, but particularly the upper, were studded with petechiæ of various sizes, but none larger than a split pea, some of a red, and others of a purple colour, each with a small white dot in its centre, and remaining unchanged by pressure. None of these spots were to be seen on the mucous membrane of either mouth, nostrils, or eyes. Pulse 104, full and bounding; respiration hurried, and accompanied with a slight cough; skin hot and dry; tongue pale red round edges, but covered in middle with an orange-coloured fur. The gums appeared to be ulcerated, and discharged blood on pressure; bowels open, but the stools were dark and fetid. The petechiæ had made their appearance about six months before I saw him, but up to that time was not prevented from following his usual occupation. He had, however, during that period, several attacks of hemorrhage from the left nostril, which always ceased spontaneously, without much loss of blood. For a few days previous to my visit, the petechiæ had been increasing in number, with an accompanying increase of debility. His diet had generally been of a nutritive quality, nor had he been too much excluded from out-of-door exercise.

"He was bled to ℥x; immediately after which he became sick, and vomited. A saline purgative was ordered to be taken as soon as the stomach became quiet. Next day I was informed that early that morning an epistaxis took place from left nostril, which was stopped by a neighbouring surgeon, by plugging, after the loss of several ounces of blood. The pain of head was gone; pulse ninety-six, and soft; and expressed himself as feeling better than he had done for some days. The blood taken from the arm coagulated without the separation of serum, and presented a pale red transparent jelly-like appearance, extending to the depth of a fourth of an inch, all under which was coal black. When the clot was broken down a sufficiency of serum was given out. He continued much in the same state, under the use of tonics and purgatives, till the 31st, when, in consultation with Dr. Hannay, he was found to complain of much headach; skin hot and dry; pulse 112, full and strong, and there was a continual oozing of blood from the left nostril, which was still plugged, and from the gums. There was much thirst and no appetite. From this condition it was judged advisable again to abstract blood. ℥xij. were accordingly taken with very considerable relief. The blood had altogether the same appearance as the former, with the exception of the coagulum being much firmer. Up to the third day from this time, there was great reason to believe that he was recovering. The appetite was considerably improved; the petechiæ were beginning to disappear, and the stools had nearly acquired their natural colour and consistence. These symptoms of improvement, however, speedily gave place to a state of much debility, which continued to increase, accompanied with a low muttering delirium for the two last days, and he died on the morning of 10th June. I regret that I had not an opportunity of examining the body.

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* Edinburgh Med. and Surg. Journal, vol. xii. p. 428.

"About a month afterwards I was requested to visit a sister of his, Mrs. G. aged about thirty, of a full and plethoric habit. I found her complaining of languor and lassitude, with slight pain in the lumbar region and thighs. On her breast and arms were scattered a number of petechiæ. They had existed for two days, and were very similar to those of her brother. Her gums were soft, but discharged no blood; nor had any hemorrhage taken place from the other passages of the body. Pulse ninety-six, very full. Tongue white. Bowels open. Blood was drawn to the amount of ten or eleven ounces; and she was ordered a dose of sulph. mag. In a few days she had completely recovered her strength, and the whole of the petechiæ were gone. The blood was cupped, and had the buffy coat.

"These cases, I apprehend, are sufficient to prove the inflammatory nature of purpura, although many more of a like character might be given."

Mr. Gardner concludes his very interesting paper by a few remarks tending to establish a strong resemblance, at least, between purpura and phlebitis; and he is of opinion that, although of late bleeding has been employed for the cure of the former disease, it has been practised empirically, rather than from correct pathological views. Of all the theories that have been advanced regarding the proximate cause of purpura, he affirms, and we perfectly agree with him, that none has done so much harm as that which ascribes it to general debility. Some nosologists have been greatly at fault in arranging purpura as a disease of the skin. Its place in the system of nosology is now, however, clearly indicated.

Case of Partial Congestion of the Cerebrum: illustrative of the Plurality of the Organs and Faculties of the Intellect: with Remarks. By WILLIAM M. FAHNESTOCK, M.D.

MUCH diversity of opinion still exists amongst philosophers in regard to the merits of the science of phrenology. At present it is attracting more attention than heretofore in this country, and there is every indication of a liberal disposition to give it that impartial consideration it so eminently demands from the investigators of truth. It has been neglected from prejudice, and the opposition of the metaphysicians, which have ever been arrayed against it; and especially from the reproach which has been so lavishly heaped upon craniology, a separate, and, in our opinion, a distinct science; as the absence of the evidences of the latter does not in the least impair the former. Phrenology, it must be confessed, is yet in a very imperfect state, though possessing high claims to favour, its fundamental propositions being founded in nature, and established, by well-attested facts, experiments and observations, on too firm a basis to be overthrown by ridicule, or the sophistry of schoolmen. Craniology, which is vulgarly deemed mere musings on an assemblage of bumps, but, by the scientific regarded as a classification of outward signs of the prominent development of the particular organs of the brain, depends on many contingencies, and must ever present imperfect indications. It asserts the possibility of recognising on the exterior of the cranium the seats of the various organs and faculties. But few contend that it is certain or infallible. Not so with phrenology or cerebral physiology. It includes the study of the structure of the encephalon, its functions, its relations, its derangements; it proposes to fathom the phenomena of the intellectual and affective faculties, to elucidate the philosophy of the mind. It is a subject susceptible of as clear demonstration as any of the other vital functions, and certainly much easier determined and understood.

Some metaphysicians who oppose in toto the idea of any connexion of the mind with physical organs, and regard the brain as a mere passive mass of nervous substance, when met by incontrovertible facts, declaim and protest most vehemently against drawing any deductions from a single case, or, in their own language, to erect a theory upon an isolated fact, while they, at the same time, build their whole system on hypothesis alone, without a single tangible fact to sustain their fairy web of fancy-work.

We do not intend by these remarks to enter into any discussion on the nature of the intellect, its essence, &c. but merely to introduce another pathological evidence, to the many already on record, showing that intelligence is connected with the cerebral organs; that those organs are multiple, and that the faculties are exercised according to the integrity of the structure of each individual organ, and are obstructed in part, or altogether, by congestions, or derangement in the various portions of the encephalon in which the different faculties are respectively located.

Baron LARREY, in his Surgical Memoirs, mentions several cases of wounds made by bayonets and swords penetrating the brain through the orbit of the eye, in which the memory for words was lost, but not of things. Dr. JACKSON has published a very interesting case of amnesia, in the Third Volume of this Journal, in which cerebral congestion suddenly induced suspended the memory for words, without any other disorder of the intellectual faculties; all the others being in full activity. Professor DICKSON, of Charleston, has also communicated a case,* in which there was a total loss of names, but a distinct memory of numbers, and power of rapid computation, remained. Plurality of organs and faculties would have given a ready solution to this case, without resorting to speculations on the problem of the mind having a greater aptitude to recognise the mathematical lines of figures. In the case which Professor WISTAR exhibited annually to the class in the University of Pennsylvania, if our recollection is distinct, there was a loss of ability to utter proper names when pressure was made on the anterior portion of the brain which was deprived of bone, the individual speaking with ease and fluency would stop articulating for a period sufficient to pronounce the name, and then go on to complete the sentence, as if unconscious of any interruption. Our reference to these few cases may suffice to screen us from the charge of laying too much might or stress on an isolated fact. An entire number of this journal would not contain the cases which might be adduced in confirmation of the plurality of the organs and faculties of the intellect.

The following case may afford additional argument to sustain the position.

In November last (1831,) John Flanagan, Esq., prothonotary of Franklin county, in this state, a gentleman of much intelligence and respectability, was attacked with influenza, then so prevalent throughout our country, which affected the upper forepart of his head especially; and particularly when he coughed, he suffered severe lancinating pain through the anterior lobes of the cerebrum, from the region of an inch and a half beneath the coronal suture to the inner angle of the eyes, which however did not prevent him from attending to his duties in court, then in session. One morning, after coughing severely, and experiencing much acute pain in the situation mentioned, which now continued without any cessation, he went into court, and in qualifying the jury found himself unable to name the parties in the suit, names with which he was perfectly familiar. He proceeded, " You do solemnly, sincerely and truly declare and affirm, that you will well and truly try the issue now joined between—" and was interrupted by inability to articulate the names of the parties. After failing in two attempts, a gentleman of the bar rose in his place, and offered to discharge the duty, which Mr. Flanagan declined, and then proceeded the third time, but was arrested again as soon as he came to the names of the parties. He then turned to the judges, and told them that he was slightly indisposed, but would persevere; then placing his eyes on the names of the parties on the docket, both of whom were intimate personal friends, he proceeded the fourth time to the point at which he was before arrested, and was unable to proceed. The presiding judge named the parties, and Mr. Flanagan finished the affirmation without any further difficulty. The ability to articulate names was not only interrupted, but even the power to recall them was suspended. He could not recollect a single name one minute during the continuance of this congestion. The day following he was making an examination of the proceedings on the court record in a suit, and, in referring from the minute-book to the docket, he would forget entirely the names of the parties. He recurred three times to the original entry, and had at length to take the names on paper, and trace it on the other; for, as soon as he turned his eye from the name, it was entirely obliterated from memory. During this period his perception was clear, memory otherwise distinct, judgment sound, and business habits unimpaired. After taking a little revulsive medicine, in the course of a few days he returned to his duties, and has not experienced any further inconvenience.

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* American Journal of the Med. Sciences, vol. vii.

We do not mean to deduce any theory from this case: we have no favorite theory to support on this subject. Our ambition is to elicit truth, and record facts; to be applied when the science of analogy shall come to reconcile the discrepancies of our present imperfect philosophy. Philosophy, like all abstruse sciences, is progressive in its advances, and its deductions are only to be received when supported by well-authenticated facts, or self-evident principles in strict analogy with nature. Our design is simply to add another fact to the mass of evidence, which illustrates and sustains the legitimate function of that delicate and wonderful organ, the encephalon.

One fact, we must remark, is worth a thousand conjectures; and we would be much more justifiable in proposing a theory founded upon a single fact, than to admit the vague assumptions and reveries of metaphysicians, which do not admit of being subjected to the test of demonstration. Instead of allowing the imagination to run riot in crude conjectures, and to revel in scholastic jargon, which has involved the science of physiology in so much obscurity, those who wish to arrive at any satisfactory conclusions respecting the manifestations of the intellect, the development of the mind, must examine minutely the structure of the brain, study attentively its functions, investigate its aberrations, and mark the abnormal condition of its diversified organs. An intimate acquaintance with the cerebral organization, cerebral physiology, and cerebral pathology, is indispensable to arrive at any certain knowledge of the operations of the intellect. Without these lights to direct us, we enter a labyrinth of doubt and darkness upon the very threshold of our speculations, and should continue to grope in fruitless research through bewildering mazes and interminable perplexities.—*American Journal of the Med. Sciences.*

PRACTICAL MEDICINE.

Treatment of the first Stage of Croup. [From Mr. ADAMS' *Pathological Observations; Glasgow Med. Journal.*]

Dr. John D. Godman* narrates, that his children have been very liable to croup, and that he was informed by Dr. F. Vanderburgh of a very simple and efficacious method of arresting, at once, all the symptoms of this frequently fatal disease. Whenever children are threatened with an attack of cynanche trachealis, he directs a plaster, covered with dry Scotch snuff, to be applied directly across the top of the thorax, and retained there till all the symptoms disappear. Dr. V. stated, that he had found this remedy always effectual when applied in the first or second stages of the malady. Dr. Godman has tried this plaster repeatedly (made by greasing a piece of linen and covering it well with Scotch snuff), and has found it abundantly efficacious. His family has been saved a great degree of anxiety since, being quite prepared for the attacks, which are frequent in cold and wet seasons. Whenever a child is hoarse, or coughs with the ringing of croup, the plaster is applied, and, instead of watching all night, the family go to rest with a feeling of entire security.

Dr. Godman adds, that "in cases of croup the Scotch snuff (which I believe is prepared from tobacco-stems) is to be preferred." Dr. Pendleton, of New York, has tried other snuff without attaining his object, while with the Scotch the effect was certain. It has many advantages over tobacco-smoke, mentioned by Dr. Chapman. "It has never caused vomiting, vertigo, or any other distressing symptom in my experience," says Dr. Godman, "and this accords with the experience of both the physicians mentioned in this note."

Dr. G. informs us, by way of appendix, that Dr. V. is in the habit of deriving advantage from the external use of tobacco, in various cases, in which it is by no means generally employed, if its use be even thought of. To allay the irritative cough arising from different diseased states of the lungs, in diseases accompanied with chronic spasm, and in the reduction of hernia, by direct application of tobacco to the hernial tumor, &c., Dr. Vanderburgh has used tobacco externally with decided success.

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* American Journal of the Med. Sciences, No. iv. Aug. 1828.

PHYSICAL SCIENCE.

Cause of Crystallization. M. CAUDIN has addressed an article on certain properties of atoms, the object of which is to point some particular cases of an extensive series of experiments regarding the immediate causes of crystallization. According to him, those bodies cleaving in a cube have for their primitive molecule a point or a right line; either an atom (as in metals); two dissimilar atoms (as in sulphuret of lead); three atoms, one of one kind, and two of another, (chloride of sodium): again, those molecules having for their form a double simple pyramid, or a prism of a number of sides, which is a multiple of four, may be assimilated to points when under different circumstances they form in groups around an accidental nucleus, and in this way they sometimes crystallize in cubes. Those bodies which cleave in a right prism, with any base whatever, have for their primitive molecule, either the polygon of the base, or a double simple pyramid, or a prism of a number of sides equal or double. When the primitive prism is not cleavable perpendicularly at the axis, it is because the molecules are polarized, that is, retained together either by an electric force, or by the force of affinity. The tetaedron, octaedron, and rhomboedron, have respectively for their primitive molecule, the first a square, or a rhomb; the second a double tetraedral or octaedral pyramid, simple or prismed, (prismèe), and the third a double hexaedral pyramid of the same nature. Finally, the absence of cleavage in these solids is owing to the want of continuity of the molecules. But in the tetraedron the want of continuity depends solely on this state of polarization, whilst in the octaedron and rhomboedron it results from the aggregation of the molecules.—*Dublin Journ. of Med. and Chem. Science.*

INTELLIGENCE.

THE HUNTERIAN ORATION FOR 1833, BY JOHN HOWSHIP, ESQ.

WE confess we perform a too tardy act of justice in now noticing the well-conceived, and equally well-delivered, oration of Mr. HOWSHIP. With some few exceptions, these annual exhibitions at the College have not been particularly attractive. It is almost impossible, indeed, that each year can produce, even from different hands, any very interesting dissertation upon one topic; and, of course, the more frequently these orations are repeated, the greater will be the ingenuity required to offer any original comments either upon the splendid talents of Mr. Hunter, or his celebrated museum.

Mr. Howship commenced by giving a neat and rapid sketch of the progress of medicine and surgery from the most remote ages of antiquity; and, in passing down to nearer periods, he neatly and eloquently descanted upon the names of Michael Angelo, Leonardo Da Vinci, and Raphael, who added to their well-known talent for painting the merit of being good practical anatomists. Here Mr. Howship embraced the opportunity of enforcing the advantages which result to the anatomical student from a knowledge of the principles of drawing; and he expressed a hope that, "as the Royal Academy of Painting has its professor of anatomy, we may one day see the Royal College of Surgeons have also its Professor of Design." Due honour was paid by the orator to the names of Harvey, Wiseman, Haller, and Hunter. A rapid sketch was given of the contents of Mr. Hunter's museum; and to Mr. Abernethy was assigned the merit of being "the most eloquent, most ingenious, and at the same time the most faithful, commentator" of that great man. The loss which science has sustained in the death of Baron Cuvier was feelingly and appropriately lamented. Mr. Howship mentioned him as the "ornament of France, the admiration of Europe, and the envy of the civilized world."—The oration was delivered extempore; and, at its conclusion, Mr. Howship was loudly and repeatedly cheered.

Apothecaries' Hall; 31st May, 1833.

Sir: I am directed by the master and wardens of the Society of Apothecaries to transmit to you the enclosed copies of a Memorial to the Secretary of State, on the subject of the Act of Parliament for regulating the Practice of Apothecaries, and of a Reply to the Statement made by the Royal College of Surgeons of Edinburgh, in support of a petition presented by them to both Houses of Parliament. I am, sir, your obedient, humble servant,

Edmund Bacot, *Clerk of the Society.*

John North, Esq.

To the Right Honourable Lord Viscount Melbourne, his Majesty's Principal Secretary of State for the Home Department.

The Memorial of the Master, Wardens, and Society of Apothecaries of the City of London,

Sheweth: That the Act for regulating the Practice of Apothecaries in England and Wales was passed in the year 1815, with the full concurrence of the medical profession in England, and was loudly called for by the then state of medical knowledge.

That the Act has been impartially and honestly administered, and the Court of Examiners of the Society, by their attention to the medical education of students, and by requiring from time to time a progressively increasing course of study, now equal to the medical education required by any college in Great Britain, have most essentially improved the schools of medicine in England, as well as the state of medical science in general; and the general practitioners of medicine throughout England and Wales, who have been educated in conformity with the regulations of the Court of Examiners, are now fully competent to all the duties of their profession, and are entitled to, and actually possess, the confidence of the public.

That the power of examining persons who are about to commence practice as apothecaries can in nowise be considered a "monopoly;" inasmuch as the persons who examine the candidates for certificates of qualification have not the most remote interest in, or connexion with, any school of medicine, nor can any teacher in any branch of medical science become a member of the Court of Examiners.

That the clause in the Act of Parliament, whereby an apprenticeship of five years is required to be served by persons before they can be examined, was not proposed by the Society of Apothecaries, but was introduced into the Act in the House of Lords. But the Society beg to remark, that a preliminary education, in the nature of an apprenticeship, is absolutely necessary, as well to lay the foundation for future acquirements, as for the moral control of students from the age of sixteen to twenty-one; which control cannot be effectually exercised at any medical school or hospital.

That those persons who state that an apprenticeship is highly injurious to medical education, must be very ill informed upon that subject; for it is very well known that an apprentice has the opportunity of acquiring most valuable professional information from a suitable course of reading, under the direction of his master, and from seeing cases which occur in his practice.

That attendance on the physician's practice at an hospital does not afford to a student the whole of the instruction in practical medicine of which he stands in need, inasmuch as one half of the deaths which annually take place are of children under five years of age, and of the aged above seventy, which cases are very rarely received within the wards of an hospital, but are attended almost exclusively by general practitioners; consequently, coming under the observation of their apprentices.

That the different colleges and corporate bodies in Scotland, who are seeking to obtain an alteration in the Act of Parliament for regulating the Practice of Apothecaries in England and Wales, by rendering the diploma of those bodies equivalent to the certificate of the Court of Examiners of the Society, are endeavouring to obtain for their licentiates a more extensive privilege in England than their diploma confers in Scotland; inasmuch as the diplomas of the University and of the Royal College of Surgeons in Edinburgh do not confer any right on the holders of them to practise as general practitioners in Glasgow, or within the counties of Lanark, Renfrew, Ayr, and Dumbarton, over which the jurisdiction of the Faculty of Physicians and Surgeons of Glasgow extends; nor does the diploma of the Faculty of Physicians and Surgeons of Glasgow confer any right within the jurisdiction of the College of Surgeons of Edinburgh; nor can a person having a diploma or certificate from any college in England, or from the Society of Apothecaries, practise in Scotland without undergoing the examination, and obtaining the diploma, of the Scotch colleges.

That numerous instances have occurred (several within the last twelve months) of graduates and members of Scotch universities and colleges having been rejected by the Court of Examiners of the Society, in consequence of their having been found incompetent to practise as apothecaries.

That, should the prayer of the petitions presented to Parliament by the Scotch universities and colleges be granted, one effect thereof would be to authorise those persons to practise immediately, who have, on examination, been found incompetent to do so without further professional study.

That the establishment of several different tribunals would give rise to very mischievous inequality of examination, and tend progressively to great laxity therein, and to lower the standard of the required attainments; more especially wherever it may happen, as it now does, at the different universities in Scotland, that the teachers are also public examiners.

That the admission of persons to practise as apothecaries who have not received certificates from the Court of Examiners of the Society, and been announced in the list annually published in conformity with the Act, will deprive the public and the Society of the means of ascertaining the illegal practitioner, and will thereby give an opportunity for ignorant and incompetent individuals, to whom the health of the public cannot be safely intrusted, to commence and continue in practice, in defiance of the Act of Parliament.

That the sums of money received by the Society of Apothecaries for certificates of qualification are not more than sufficient to defray the necessary expenses of enforcing the law against incompetent and unqualified practitioners, and the other necessary expenses of administering the Act; and that no part whatever of the sums so received has been, or is, appropriated to the private purposes of the Society.

That there are now in England numerous schools of medicine, all of which (with the exception of a few in London) have been established since the passing of the Act of Parliament, at great expense to the parties who have established them.

That one effect in the alteration of the law sought for by the Scotch universities and colleges will necessarily be to prove a serious injury to all the schools of medicine in England.

That at these schools, including those in London, there are now attending nearly 1300 students, exclusive of nearly 2000 apprentices in other parts of the kingdom.

That 6498 persons have been examined by the Court of Examiners of the Society since the passing of the Act in 1815, to 5769 of whom certificates have been granted; and the number of general practitioners in England and Wales is now upwards of 10,000 persons.

Your memorialists therefore beg to draw your lordship's serious attention to these circumstances, trusting that due consideration will be given to a subject of such high importance to the interests of the profession and the public, and that an opportunity will be afforded to the Society to show, as they are prepared to do, that the Act of Parliament has been properly and efficiently administered, and to refute any statement which has or may be made against the Society, and to show that all the benefits which the Act of Parliament was intended to afford to the public have been fully attained.

By order, (Signed) Edmund Bacot,

8th *May*, 1833. *Clerk to the Society.*

A Reply *to the* Statement *in support of a* Petition *of the* Royal College *of* Surgeons *of* Edinburgh.

The Society of Apothecaries of London beg to solicit attention to a Reply to the Statement made by the Royal College of Surgeons of Edinburgh, in support of a petition presented by them to the two Houses of Parliament.

The object which the college of Edinburgh has in view is, to obtain for itself, and for the other medical authorities in Scotland, the power of authorizing all persons to practise as apothecaries in England and Wales, who already have, or hereafter may obtain, degrees or licences from the Scottish colleges, which the Act of Parliament for better regulating the Practice of Apothecaries, passed in the 55th year of his Majesty Geo. III. 1815, does not now permit them to do. Among the causes of complaint stated by the college, the following appear to be the principal:

1st, The college state "that the Society of Apothecaries, *without their knowledge*, applied for and obtained an Act of Parliament, by which all persons are prohibited, under certain penalties, from practising as apothecaries in England and Wales, unless they shall be licensed by the Society.

2d, "That the Society of Apothecaries so interpret the 15th clause of the said Act relating to apprenticeship, as entirely to exclude from examination, and licence, all medical students who have received their education in Scotland.

3d, "That the power possessed by the society is a 'monopoly;' that it is unjust to the licentiates of the Royal College of Edinburgh, as well as to others, who possess testimonials or diplomas from any of the different public bodies intrusted with the superintendence of medical education in these kingdoms; that it excludes from practice in England and Wales, persons whose certificates of qualification are much more ample than those possessed by the licentiates of the Society of Apothecaries, and whose knowledge and acquirements are above all exception; and that it is injurious to the interests of the community."

In reference to the first complaint of the college, "*That the Act was applied for and obtained without their knowledge.*" It is presumed that the college, in stating that the society applied for and obtained the Act of Parliament *without their knowledge*, intend only to represent that the society did not give them official notice of what was passing in Parliament, since it is impossible to imagine that the college could either be inattentive to, or ignorant of, a matter which excited such general and deep interest throughout the whole medical profession in England. For more than three years prior to the passing of the Act, *Medical Reform* was under discussion in almost every city, town, and village in England; numerous district associations were formed for the promotion of that object, and, in London, a central committee, consisting of the most eminent general practitioners, was appointed, among whom were many natives of Scotland. The district associations held frequent correspondence with the central committee; and, for the more effectually promoting the object which all had in view, deputies were sent from the country to communicate personally with, and assist, the London committee. The result of these conferences was, that Parliament was applied to, to create a superintending body, who should be empowered to examine candidates and grant certificates of qualification, without which no persons should be allowed to practise as apothecaries in England and Wales. The government and legislature, however, objected to grant a controlling power to any new authority, considering that the execution of the Act ought to be confided to one of the existing chartered bodies; and eventually, the Society of Apothecaries was considered by all parties to be the most proper body for this purpose, and they, in conjunction with the Association of Apothecaries, prepared a Bill, which was introduced into Parliament, with the full assent and concurrence of the Royal College of Physicians, and the sanction of his Majesty's government. This Bill, after considerable discussion, was passed by both Houses of Parliament, and received the Royal assent.

The colleges of Scotland have each their own several and separate jurisdictions, over which they exercise, by virtue of their charters, an independent government and control; they have the power of prescribing the manner and duration of the studies of persons who intend to apply to them for licence to practise, and they have the power of granting or refusing such licence, and of preventing all other persons from practising within their several jurisdictions. The College of Surgeons of Edinburgh is a chartered corporation, and within the limits of their charter, the entire government of the surgeon-apothecary's practice is confided to the college. "The Faculty of Physicians and Surgeons of Glasgow is a corporate body, erected by charter in 1599, confirmed by Act of Parliament, with power to call before it and examine all practitioners in medicine, surgery, and pharmacy, (who have not obtained a medical degree,) within the counties of Lanark, Renfrew, Ayr, and Dumbarton, and to license or interdict from practice, as may appear to them proper."*

Neither in Edinburgh nor in Glasgow can any person practise as a surgeon-apothecary, unless, in Edinburgh, he is a fellow of the college, or in Glasgow, unless he is a member of the faculty there; and so jealous are these colleges of their respective privileges, that the college of Edinburgh will not suffer a member of the Glasgow faculty to practise in Edinburgh, nor will the Glasgow faculty suffer a fellow of the college of Edinburgh to practise in Glasgow. Nor will either of these corporations permit their own licentiates to practise in Edinburgh itself, or in Glasgow, but confine the entire practice in these towns to such persons as are fellows or members.

With these general or local privileges the medical authorities of England have never at any time attempted to interfere. In claiming therefore for themselves the power of acting as circumstances may direct, with perfect independence of the Scottish colleges, the society claims no more for itself in England, than those institutions possess in Scotland.

The society contend that the Scottish colleges have no right to interfere in any manner with any enactments or regulations which the constituted medical authorities of England may deem essential to their own government, or for the welfare of the public, so long as they confine themselves to this division of the island, and do not make any attempt on the provinces of others.

Another complaint of the College of Surgeons of Edinburgh is, "That the society so interpret that clause of the Act which relates to apprenticeship, as entirely to exclude from examination and licence all medical students who have received their education in Scotland."

Had the College of Surgeons of Edinburgh made application to the Society of Apothecaries respecting the interpretation which they put on this clause, they assuredly would not have put forth a statement so fallacious as that which they have unadvisedly circulated.

The words of the Act are, "Provided always, and be it enacted, that no person shall be admitted to any such examination for a certificate to practise as an apothecary, unless he shall have served an apprenticeship of not less than five years to an apothecary." In their interpretation of this clause, the society have not confined themselves to the narrow limits ascribed to them by the college; but have, on the contrary, put upon it the most liberal construction in their power, by considering that every candidate who has been an apprentice for the length of time directed by the Act, is entitled to be examined, provided the person to whom he was an apprentice was legally qualified to practise as an apothecary according to the laws in force in *that kingdom or particular district in which he re-*

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* Extract from a Report of the Faculty of Physicians and Surgeons of Glasgow, dated August 5, 1806, and signed Robert Freer, Convener.

sided: and in accordance with this interpretation, hundreds of candidates have been admitted to examination who have served their apprenticeships in Scotland and Ireland, as well as many from America and the British colonies. It is true, indeed, that the society do not admit candidates to be examined who have served apprenticeships in England or Wales, unless the apothecary, to whom they were apprenticed, was himself legally qualified by the law of England to practise; but the society have always admitted candidates to examination who have served their apprenticeships in Scotland, provided the master was legally qualified to practise according to the laws of that country.

It may be as well to take this opportunity of referring to a paragraph of the published statement of the college, in order to relieve the society from the imputation of having been guilty of a gross absurdity. The paragraph is this:

"To obviate the glaring injustice of this provision of the Apothecaries' Act, (viz. the necessity of apprenticeship to an apothecary), there was introduced into a Bill to amend and explain it, which was passed in the session of 1825, a clause authorising the Court of Examiners to examine apprentices to surgeons. But, as the duration of that Bill was limited to a single year, and has not since been renewed, the provision of the original Act respecting apprenticeships has again come into force."

The facts are, that the Bill here alluded to was prepared by the society, and was introduced to the House of Commons by the present Lord High Chancellor of England, and, having passed that house, was sent to the House of Peers. The Scottish universities and colleges then attempted to procure for their graduates and licentiates the same privileges which are now sought to be obtained; and, failing to accomplish this purpose, the result was, that the duration of the Bill was limited to one year; and thus was a Bill, which was intended by the society to remove disabilities, and to amend acknowledged defects in the law, defeated. Let not the College of Surgeons of Edinburgh, then, impute to the society as a fault, that which was the decision of the House of Lords.

That opinions adverse to apprenticeships (of whatever duration) are entertained, and that such opinions are readily received among youth, and by persons unacquainted with the subject, the society have been for a long time fully aware; but they were not prepared to expect such sweeping denunciations against this method of preparatory education, as the Edinburgh college have now put forth in their statement, and which, after the well-known and recently recorded opinion of that body on the contrary side of the question, have excited no small degree of astonishment.

This recorded opinion of the college is to be found in their "Regulations to be observed by candidates previously to their being taken upon trial for obtaining diplomas from the Royal College of Surgeons of Edinburgh." As this preface to the regulations of the college has not been circulated with their published statement, the society insert an extract from it, accompanied by an extract from the printed preface to the regulations of the Court of Examiners of the society; thereby affording to the public an opportunity of learning what the opinions of the college recently were, and in what respects the College of Surgeons of Edinburgh and the Society of Apothecaries agree as to the preparatory qualifications necessary for a medical student, and as to the best course of pursuing his medical education.

COLLEGE OF SURGEONS OF EDINBURGH.

Extract from the Preface to their Regulations.

While they thus recommend, in the strongest manner, an attention to these preliminary branches of instruction, Latin, Greek, and modern languages, and of the elements of mathematics and natural philosophy, as the best preparation for their entering upon a course of medical and surgical education, the college wish to remind the public, that

SOCIETY OF APOTHECARIES OF LONDON.

Extract from the Preface to their Regulations.

Before the student enters upon his professional studies, it is indispensably necessary that he should have received a classical education, as, in addition to the advantages which result from the mental discipline such an education affords, he will find a familiar knowledge of Greek and Latin imperatively requisite, to enable him to understand the profession of surgery is a practical art, which cannot be acquired without continued personal intercourse with the sick; and this, they believe, can best be obtained by serving an *apprenticeship* to a regular practitioner, under whose inspection young men may not only prosecute their studies with the greatest advantage, but have frequent opportunities of being conversant with the sick, and of assisting in *preparing* and applying the means used for their recovery. The college further hope that every master will direct his apprentices as to the classes which they ought to attend, and the books which they ought to read; that he will occasionally subject them to examination, to ascertain their progress in the different branches of their education; and that he will explain the nature of the cases which they are attending under his superintendence.

the terms of art employed in medicine and its associated sciences, derived almost exclusively from those languages, and to comprehend, and also retain, the information imparted to him by his teachers. An acquaintance with the mathematical sciences, also, is scarcely less necessary, to enable the student to understand the admirable structure and functions of the human body, and to acquire habits of correct reasoning on the complicated phenomena of life and disease; and, since many valuable contributions to professional literature have been made in the French and German languages, it is desirable, when opportunity offers, or circumstances will permit, that he should likewise be instructed in those languages, so as to be enabled to read and translate them with facility. *During his apprenticeship*, a systematic course of study should be arranged, by which the pupil may be conducted progressively from elementary principles to the observance of disease; neither wasting his time by exclusive attention to practical pharmacy, nor employing it with as little profit in a premature attendance on the sick.

The society will not attempt, by any arguments, to give additional force to these strong recommendations of the college in favour of an apprenticeship, but merely request that it may be recollected, that the observations of the college, although they apply apparently to surgery only, are really meant for the surgeon-apothecary, or general practitioner; since in Scotland there is not any class of persons who devote themselves exclusively to the practice of surgery, as is the case in England, where the great mass of the profession are surgeon-apothecaries; the number who practise as surgeons only being very few, and of those who practise as apothecaries only, still fewer.

Although the society have not any intention of entering, on the present occasion, into the question of the length of time which may be usefully passed in an apprenticeship, they are nevertheless persuaded that many advantages attend this mode of beginning a professional life. It is not among the least of these advantages that a youth, at a very dangerous period of his life, is placed by his parents in a moral and religious family, and under the immediate eye and restraint, as well as instructions of a master, where he may acquire those habits of moral rectitude and self-control which he must practise in after-life, if he wishes to succeed in a profession which imperatively demands the strictest morality as the basis of its reputation. In favour of apprenticeships, too, it may be observed, that all the eminent surgeons of this country have been educated under that system, and that the College of Surgeons of London require an apprenticeship of not less than six years to be served by all persons who are educated under their immediate superintendence.

Lastly: the College of Surgeons of Edinburgh complain "that the power of the Society of Apothecaries is a monopoly;" that it is unjust to the licentiates of the college, as well as to others, who, like them, possess testimonials or diplomas from any of the different public bodies entrusted with the superintendence of medical education in these kingdoms; that it excludes from practice in England and Wales persons whose certificates of qualification are much more ample than those possessed by the licentiates of the society, and whose knowledge and acquirements are above all exception; and that it is injurious to the interests of the community."

The society deny that the Act of 55 Geo. III. gives them any "monopoly," and they are prepared to prove, that the objects which were contemplated, can only be carried into effect by the full, free, and independent exercise of the power which they possess under that Act. The society have always considered this power as a sacred trust, to be used for the benefit of the public only; and they feel that it would be impossible that the purposes of the trust could be accomplished, should the prayer of the petitioners be granted. It is not among the least important of their duties, that the society is by the Act required to enforce the penalties thereby imposed against persons who may practise illegally as apothecaries in England and Wales. This provision of the Act would be in a great measure defeated, should the licence granted by any other authority be rendered equivalent to that of the society; and in the ratio of the number of such authorities, would the power of enforcing the Act be diminished. It is already sufficiently difficult and expensive to enforce the law against ignorant and incompetent practitioners; and, should the alteration in the law now sought for be granted, it would become infinitely more difficult, as every authority empowered to grant the privilege of practising must on every occasion be referred to, for the purpose of ascertaining whether or not the particular individual complained of was licensed, and hence so much difficulty, uncertainty, and delay would result, that the Act could be enforced against few, if any persons, and the public would in this respect be placed in the same unprotected state in which they were previously to the passing of the Act.

In addition to these reasons, it is necessary also that the society should have independent control within their own jurisdiction, so that they may be enabled to prescribe the duration and extent of that education which they deem essential that candidates should possess; and not less requisite to enable the society to maintain, and gradually to improve the examination, which they may consider it indispensably necessary that every person should undergo who is to practise as an apothecary. The society do not deny the efficiency of the course of education prescribed by the College of Surgeons of Edinburgh, but they do not acknowledge that course to be better than their own; they contend, however, that if several authorities should be empowered to grant licences to practise within the same district, the standard of medical education and medical acquirements would be reduced to a very low scale, as it would tend to establish great inequality and laxity in the required education and examination; and students would naturally appear before that tribunal where they could obtain their licence to practise with the least expenditure of time, and with the smallest degree of mental application, and, should a student be rejected as incompetent by one authority, he would not re-appear before the same, but apply to another and another, until at last, finding one more lenient or less conscientious than the others, the incompetent person would obtain his licence, notwithstanding his previous rejections.

The College of Edinburgh state "That their diploma was admitted previously to 1815 as a qualification to practise surgery and pharmacy, and consequently to act as general practitioners of the healing art throughout the United Kingdom; and it has been, and is, received as a qualification in the medical services of the army and navy, and in the service of the Honourable East India Company." But this right of practising before 1815 did not belong to these persons in virtue of their diploma, as any person might then practise the healing art in England and Wales; and the statement, as far as regards the army, navy, and East India Company, is not correct; as all persons, whether holding the diploma of the college, or of any other body, are required, before entering those services, to be examined by the boards and medical officers appointed for that purpose, and the results of such examinations have not shown any superiority in the holders of Scottish diplomas.

In support of the assertion made by the College, that the course of study required by them is superior to that required by the society, they have annexed to their statement a comparative table, by the inspection of which they wish the public to draw an inference in their favour. This table, however, is fallacious, because it exhibits a partial view of the education of the general practitioner as

England. In Scotland every person not practising as a physician, is both a surgeon and an apothecary. The fellows of the College of Surgeons of Edinburgh practise in this double capacity, and the education required by the college is adapted for the practitioners of both surgery and medicine.

In England the Society of Apothecaries superintend the medical education alone of the general practitioner; who, in order to obtain a diploma in surgery, must, in addition to the medical studies required by the society, follow the course of education required by the College of Surgeons of London, and undergo examination in surgery by the Court of Examiners of that body, none of whom practise medicine. The English surgeon-apothecary thus passes examinations by two bodies, each preceded by appropriate studies, while the general practitioner in Scotland is examined by one body only.

The college claim for their licentiates and for the graduates of the Scotch universities a superiority in medical acquirements over the licentiates of the Society of Apothecaries. The society are, however, prepared to prove that this claim is not well founded; the records for the last year showing, that while one in six of candidates generally have been found unequal to pass the examination, one in three of these graduates and licentiates have failed.

For twelve months, commencing 1st May, 1832, and ending 25th April, 1833, the last day to which the statement is made up, the number stands thus:

	Examined.	Rejected.	Passed.
Candidates in general	364	57	307
Graduates and licentiates of the Scottish colleges	24	8	16

When it is considered that medicine is not an abstract science, but a practical art, it must be obvious that the student who has had the best opportunities of being practically educated will, *cæteris paribus*, be the best practitioner. In his own study, and in the lecture-room, the student may learn the principles of his profession; but it is at the bedside of the sick he must acquire that familiarity with disease which alone can make him an accomplished practitioner. It will avail but little that he is deeply read, and that he has attended most diligently at lectures, if he has not had the opportunity of being conversant with sickness and disease.

The following statement of the number of public hospitals and dispensaries will shew the superior opportunities of obtaining practical knowledge of the medical profession which London affords over the Scottish capital:

EDINBURGH.

Number of students	700
Hospitals.	**Patients.**
The Royal Infirmary	250
Two dispensaries.	

LONDON.

Number of students	1000
Hospitals.	**Patients.**
St. Bartholomew's	450
St. Thomas's	450
Guy's	540
The London Hospital	330
St. George's	250
The Middlesex	200
The Westminster	100
Twelve or fourteen dispensaries.	

The Infirmary of Edinburgh is so small, and the pupils so crowded, as to render it impossible for a tenth part of them to obtain a sight either of the patient or the visiting physician, nor can the majority even hear his report of the state of the patient or the remedies prescribed. Hence a practice has arisen of some person near to the physician repeating his observations and prescriptions verbally to those who are more distant. The report thus made is committed to writing by a few, and by the others, if heard at all, is probably soon forgotten; and it is obvious that little, if any, practical instruction can be derived from such means.

It requires, therefore, little observation to convince any uninterested and unprejudiced person how inadequate the opportunities of obtaining a practical knowledge of medicine are in Edinburgh, while in London, and many of the great towns in England, hospitals exist of so great an extent as to afford accommodation sufficient to enable double the number of students now attending to acquire a practical knowledge of their profession, all of which, in consequence of the education required by the Court of Examiners, have been converted into efficient schools of medicine. If, therefore, the most celebrated school in Scotland is so manifestly inferior to London in the opportunities which it affords of giving practical instruction, what can be said as to the ancient university of St. Andrew's, where there is no hospital, and but one professor to teach every branch of medical science?

The means, moreover, of teaching anatomy are, at Edinburgh, very insufficient, from the difficulty of procuring subjects, and the strong prejudices which exist against dissection; for, without a thorough knowledge of the structure of the human frame, it is impossible to acquire an accurate acquaintance with its diseases.

The foregoing statements, it is submitted, are sufficient to shew that the Act of Parliament was not obtained secretly and covertly, but was a measure demanded for the protection of the public against ignorant and uneducated persons, and that the conduct of the society was most open and unreserved; that the required apprenticeship has not the effect of preventing persons educated in Scotland from being examined for licenses to practise in England, and that the graduates and licentiates of the Scottish colleges do not possess attainments superior to the licentiates of the society. It is necessary, however, to disprove the statement made by the college, "that the power possessed by the society is injurious to the interests of the community." This statement is the only one in which the public is concerned, for the others have reference merely to the private interests of the Scottish colleges: and it will be most satisfactorily controverted by the statement of a few facts. Previously to the passing of the Act of Parliament, any person, whether educated or uneducated, and however ignorant he might be, had the right of practising the profession of medicine in England; and, although the greater number of medical practitioners were not so fully educated as it was desirable they should be, there were however to be found among them many possessing qualifications of the highest order. These differences in professional attainments resulted from the non-existence of any authority either to direct the education, or to ascertain the competency of persons to practise their profession.

The education of the great majority of students who at that time resorted to London, for the purpose, as it was then popularly called, of "walking the hospitals," was extremely defective, their attention being chiefly, if not exclusively, directed to surgery; the course of study being confined to an attendance on one or two courses of lectures on anatomy, and one on surgery; and for a few months they gave a desultory and superficial attendance on the surgeon's practice of an hospital; a few attended lectures on the practice of medicine, and still fewer lectures on chemistry; but materia medica and therapeutics were almost wholly, and the medical, or physician's practice at the hospitals was entirely, neglected. A course of study so little calculated to fit students for the duties of their profession required alteration; and the Court of Examiners of the society applied themselves to the performance of this very important duty with zeal and discretion. They were well qualified to superintend the education of persons destined to practise the same branch of the profession which they themselves practised: and, although fully sensible that medical education was susceptible of much improvement, they were, nevertheless, unwilling to make any extensive alterations precipitately; the increase of study required has consequently been progressive. and although the Examiners consider that their regulations are yet capable of further improvement, yet they feel assured that the plan of medical education laid down by them is, in every respect, equal to that of any university or college in any part of Great Britain. The power vested in the Court of Examiners by that clause of the Act which authorizes them to require of all candidates for examination "testimonials of a sufficient medical education," has enabled them to require and enforce the present course of study, in which it will be perceived that every branch of science which has any relation to the practice of medicine is included; and that the valuable field of information afforded by the great hospitals of England cannot, as formerly, be neglected.

In proof of this fact, it is only necessary to refer to the following table of the number of pupils who attended the physician's practice at the several hospitals in London, in the year 1814 (the year before the passing of the Act), and in the year 1832.

Hospitals.	Year 1814.	Year 1832.
St. Bartholomew's	6	87
St. Thomas's	1	86
Guy's	16	62
London	0	20
Middlesex	1	32
St. George's	14	31
Westminster	0	8

The effects of the impulse which was given to medical education in England by these progressive demands of the court for a longer and more extensive course of study, are clearly demonstrated by the better organization of the medical schools of London, and by the establishment of medical schools in many of the principal towns of England, viz. Bath, Bristol, Birmingham, Manchester, Leeds, Hull, Liverpool, and Sheffield, in which all the branches of medicine are taught by gentlemen of undoubted competence. The same consideration which induced the Court of Examiners not to make a sudden and extensive alteration in the course of study, induced them also to make their examinations during the first few years less extensive than they have since become, but such examinations have always embraced every branch of science connected with the practice of medicine. The following table exhibits the results of these examinations for every year since the establishment of the Court of Examiners:

From August 1st to July 31st.	Examined.	Rejected.	Passed.
1815 to 1816	185	12	173
1816 — 1817	192	11	181
1817 — 1818	226	17	209
1818 — 1819	268	15	253
1819 — 1820	275	20	255
1820 — 1821	297	13	284
1821 — 1822	340	20	320
1822 — 1823	409	28	381
1823 — 1824	374	24	350
1824 — 1325	397	32	365
1825 — 1826	488	43	445
1826 — 1827	465	47	418
1827 — 1828	510	70	440
1828 — 1829	365	65	300
1829 — 1830	525	86	439
1830 — 1831	465	104	361
1831 — 1832	446	73	373

The name of each rejected candidate, together with the causes of his failure, are entered in a book at the time of his rejection: these books the society will be quite ready to produce, whenever either House of Parliament, or his Majesty's Government, may be pleased to call for them.

The Court of Examiners have also established a system of registration, by which the attendance of the student on all the courses of lectures required by the court is insured, and by which they have perfect knowledge of the present standing of every medical student in England, as to the particular lectures which he is attending, and at what school. The benefit of these arrangements is apparent in the improved character of medical students; and the teachers in the different schools bear ample testimony to their increased diligence and zeal in the acquirement of knowledge; and all persons who take an interest in the subject unhesitatingly acknowledge that the society has done more for the advancement of medical education, and for the benefit of the community, than any other medical authority in the united kingdom.

The society is prepared to show that the sums of money received by them for certificates of qualification, are not more than sufficient to defray the unavoidable charges of enforcing the law against incompetent and unqualified practitioners, and the other necessary expenses of administering the Act; and that no part whatever of the sums so received has been, or is, appropriated to the private purposes of the society.

The examiners are not permitted to be lecturers, or to have any interest whatever in any medical school; so that no temptation exists to induce them, at their examinations, to shew favour or affection to candidates; for, not being connected with any school or hospital, they are consequently in a situation to be perfectly impartial; while, in Scotland, the professors at the different universities are the examiners of their own pupils.

The society, in concluding this reply, have only to add, that they have always, to the best of their abilities, and in the honest exercise of their judgment, endeavoured faithfully and conscientiously to perform all the duties entrusted to them; that the successive Courts of Examiners have established a competent course of education, and an efficient examination; and that they have ever shewn that they considered themselves as invested with a sacred and responsible power, to be used for the public good, and for that alone. They therefore submit, that the statement made by the College of Surgeons of Edinburgh, "that the present state of the law is injurious to the interests of the community," has been fully disproved; and that it is apparent that the Act of Parliament of which they complain has been eminently conducive to the welfare of the public, and ought not to be altered without the most deliberate and unprejudiced inquiry into the whole subject; and the Society of Apothecaries declare their perfect readiness to meet such inquiry, whenever Parliament shall think fit to entertain the question.

The following are the Regulations of the Court of Examiners of the Society of Apothecaries, to be observed by Candidates for their Certificate.

Every candidate for a certificate to practise as an apothecary will be required to produce testimonials,

Of having served an apprenticeship of not less than five years to an apothecary, as required by the fifteenth clause of the Act for the better regulating the Practice of Apothecaries. Of having attained the full age of twenty-one years; and of good moral conduct.

Students whose attendance on lectures commenced on or after January 1831, must, in addition to these testimonials, adduce proof of having devoted at least two years to an attendance on lectures and hospital-practice, and of having attended the following courses of lectures:

Chemistry, two courses; each course consisting of not less than forty-five lectures.

Materia Medica and Therapeutics, two courses; each course consisting of not less than forty-five lectures.

Anatomy and Physiology, two courses; Anatomical Demonstration, two courses; of the same extent as required by the Royal College of Surgeons of London.

Principles and Practice of Medicine, two courses; each course consisting of not less than forty-five lectures. To be attended subsequently to the termination of the first course of lectures on chemistry, materia medica, and anatomy and physiology.

Botany, one course, consisting of not less than thirty lectures, to be attended between the 1st of April and 31st of October.

Midwifery, and the Diseases of Women and Children, two courses.

Forensic Medicine, one course; to be attended during the second year.

Students are likewise earnestly recommended to avail themselves of instruction in Morbid Anatomy.

The candidate must also have attended for twelve months, at least, the physician's practice at an hospital containing not less than sixty beds, and where a course of clinical lectures is given; or for fifteen months at an hospital wherein clinical lectures are not given; or for fifteen months at a dispensary connected with some medical school recognized by the court. No part of this attendance can be entered upon until the termination of one entire year from the commencement of attendance on lectures, nor until one course of lectures, at least, on chemistry, materia medica, anatomy, and the practice of medicine, have been attended, in the order prescribed by the regulations.

The examination of the candidate for a certificate of qualification to practise as an apothecary is as follows:

1. In translating parts of Celsus de Medicinâ, or Gregory's Conspectus Medicinæ Theoreticæ, physician's prescriptions, and the Pharmacopœia Londinensis; 2, in Chemistry; 3, in Materia Medica and Therapeutics; 4, in Botany; 5, in Anatomy and Physiology; 6, in the Principles and Practice of Medicine. (This branch of the examination embraces an inquiry into the diseases of pregnant and puerperal women, and also into the diseases of children.)

LITERARY INTELLIGENCE.

Shortly will be published, (dedicated, by permission, to the King,) a History of Mummies, by Thomas Joseph Pettigrew, F.R.S. F.A.S. F.L.S., Member of the Royal Asiatic Society, Doctor of Philosophy of the University of Gottingen, Surgeon to the Charing-cross Hospital, Asylum for Female Orphans, &c. &c.

The object of this work will be to give a complete and entire history of mummies, human and comparative, both natural and artificial, from the earliest period to the present time; to detail the various processes of embalming adopted by the ancients; and to treat the subject as regards its antiquity, its relation to the natural history of man, to natural history in general (in reference to the substances used to prevent putrefaction from taking place;) the state of the arts and manufactures among the ancient Egyptians, as shewn in the structure of the cases, bandages, &c.; also to give an account of the various idols, emblems, coins, inscriptions, papyri, &c., that have been found enclosed in mummies, and of the different methods that have been practised in modern times to imitate the processes of the ancients. The whole will be illustrated by numerous plates, representing mummies of all kinds in their several states and conditions, and the substances which have been met with in the unfolding of them.

MONTHLY LIST OF MEDICAL BOOKS.

[*Medical Works cannot be entered on this List unless a copy be sent for the purpose, the titles of Books having frequently been sent to us as published, which have not appeared for weeks, or even months, after.*]

The Cyclopædia of Practical Medicine. Edited by John Forbes, M.D., F.R.S., &c., Alex. Tweedie, M.D., &c., and John Conolly, M.D., &c. Part XVI. Containing, *Paralysis*, (concluded), by Dr. Todd; *Parotitis*, Dr. Kerr; *Pellagra*, Dr. Kerr; *Pemphigus*, Dr. Corrigan; *Perforation of Viscera*, Dr. Carswell; *Pericarditis*, and *Carditis*, Dr. Hope; *Peritonitis*, Dr. Mac Adam and Dr. Stokes; *Persons found Dead*, Dr. Beatty; *Phlegmasia Dolens*, Dr. Lee; *Pityriasis*, Dr. Cumin; *Plague*, Dr. Brown; *Plethora*, Dr. Barlow.—Large 8vo. pp. 127. London: Sherwood, Gilbert, and Piper.

The Origin and Progress of the Malignant Cholera in Manchester, considered chiefly in their bearing on the Contagiousness and the Secondary Causes of the Disease. To which are added, some Remarks on the Treatment. With an illustrative Chart. By Henry Gaulter, M.D., of Magdalen College, Oxford, &c.—8vo. pp. 206. Longman, London.

Part XX. The Principles and Practice of Obstetric Medicine, in a Series of Systematic Dissertations on Midwifery and on the Diseases of Women and Children. Illustrated by numerous Plates. By D. D. Davis, M.D., &c.—4to. John Taylor, London.

Sketches from the Case-book, to illustrate the Influence of the Mind on the Body; with the Treatment of some of the more important Brain and Nervous Disturbances which arise from this Influence. By R. Fletcher, Esq., Surgeon to the Glocester General Hospital, &c.—8vo. pp. 391. London: Longman and Co.; Simpkin and Marshall.

Clinical Lectures on the Contagious Typhus, epidemic in Glasgow and the Vicinity, during the Years 1831 and 1832. By Richard Millar, M.D., Senior Physician to the Royal Infirmary, &c.—8vo. pp. 144. London: Longman and Co.

A Treatise on some Nervous Disorders; being chiefly intended to illustrate those Varieties which simulate Structural Disease. By Edwin Lee, Member of the Royal College of Surgeons; formerly House Surgeon to St. George's Hospital.—8vo. pp. 158. London: Burgess and Hill.

APOTHECARIES' HALL.

Names of Gentlemen to each of whom the Court of Examiners have granted Certificates:

MAY 30.
John S. Burgess Budgett, Shepton Mallet
Edward Drewry, Derby
George Dunn, Barnsley
Henry Patrick Finiccaine, Dublin
James Joseph Power
John Steele, Borden, Kent
Henry Somerville, Stafford
James Bailey Toldervey, Croydon

JUNE 6.
Henry Bell, Leeds
William Murdoch, Rotherhithe
Edward Young, Hawkhurst

JUNE 13.
William Atkinson
William Ball, Todwick
Thomas Butterworth, Manchester
Robert Cartwright, Oswestry
Charles Dyer, London
Thomas Nicholas Heygate, Hanslope
Frederick Gilder Julius, Richmond
John Peck Margetts, Huntingdonshire
Robert Knewstubb Richmond, Chatham
Frederick Charles Wright, London

JUNE 20.
John Brown
Frederick Josiah Burgess
Edwin Unwin Berry.

METEOROLOGICAL REGISTER,

By Messrs. Harris and Co., Mathematical Instrument Makers, 50, High Holborn.

	Moon.	Rain gauge.	Thermometer			Barometer.		De Luc's Hygrometer		Winds.		Atmospheric Variation.		
May			9 a.m.	max.	min.	9a.m.	10p.m.	9a.m.	10p.m.	9 a.m.	10p.m.	9 a.m.	2 p.m.	10 p.m.
20			60	66	55	29.90	29.92	76	74	WNW	WNW	cloudy	fine	cloudy
21			62	70	56	30.14	30.14	70	69	WNW	S	fine		
22			65	70	55	.15	.15	67	65	SE	SE			
23			65	68	55	.15	.10	65	63	ESE	SE			
24			68	74	57	.08	29.99	63	60	ESE	SSE			
25			66	76	55	29.83	.83	58	57	WSW	ENE			
26	☽		61	67	48	.98	30.83	57	57	E	NE			
27			55	62	50	30.08	.03	57	58	ESE	ENE			
28			60	69	52	.03	29.93	58	57	WNW	NE			
29			61	64	51	29.93	.94	58	58	E	SE			
30			61	62	48	30.03	30.01	57	59	ESE	SE			
31			60	66	52	.01	29.95	60	59	SE	SE			
June														
1			70	74	57	29.82	.73	59	54	S	SW			cloudy
2	○		63	70	55	.58	.33	56	62	WSW	WSW			rain
3			61	65	52	.28	.37	59	59	W	SW			fine
4			60	65	53	.37	.41	59	59	SSW	WSW			cloudy
5			61	67	54	.46	.56	59	58	WNW	WSW			cloudy
6			66	73	60	.57	.63	58	58	SSW	WSW			
7			68	73	60	.77	.83	58	59	NW	WNW	cloudy	fine	fine
8			68	71	62	.93	30.02	59	57	NW	NW			
9			71	75	55	30.04	.04	58	58	NW	NW	fine		
10	☾		63	76	63	.00	29.85	60	60	NW	S			
11			69	71	54	29.46	.55	59	58	WSW	W	cloudy		cloudy
12			60	63	54	.52	.44	58	60	NW	W			
13			57	63	53	.40	.25	61	67	WSW	WSW	rain		cloudy
14		.25	61	63	48	.30	.43	65	63	NW	ENE	cloudy		fine
15			57	65	55	.63	.67	62	63	ENE	SSW	fine		
16			61	68	58	.44	.58	68	67	S	SW	rain	cloudy	fine
17	●	.28	65	70	55	.62	.69	65	66	W	W	fine	fine	
18		.15	65	70	58	.84	.87	63	62	W	WSW	cloudy		
19			65	69	60	.81	.75	62	64	WSW	SW		rain	showery

The quantity of Rain fallen in May, was 78.100ths of an inch.

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> "For many fortunate discoveries in medicine, and for the detection of numerous errors, the world is indebted to the rapid circulation of Monthly Journals; and there never existed any work to which the Faculty in Europe and America, were under deeper obligations than to the, 'Medical and Physical Journal of London,' now forming a long but an invaluable series."—RUSH.

ORIGINAL PAPERS.

STRYCHNINE IN PARALYSIS.

Observations and Reflections on the Employment of Strychnine in the Treatment of Paralysis. By E. GEDDINGS, M.D., Lecturer on Anatomy and Surgery, Charleston, S. C. [*American Journal of Med. Sciences.*]

THE materia medica is subject to incessant revolution. Daily experience unfolds to us some new therapeutical resource; and, while hundreds of new remedies, which have been issued into notice by the most extravagant encomiums, are perpetually passing into a speedy and well-merited oblivion, bountiful Providence reveals to us many invaluable properties in others, which we have been accustomed to overlook, or consider as possessing but feeble claims upon our attention. But a few years ago, and the principles upon which the efficacy of Peruvian bark and opium depends were unknown, and those articles could not be divested of the disagreeable concomitants which necessarily attended their administration. But what are the lights of modern chemistry not capable of accomplishing? Guided by its influence, what an inestimable blessing has the ingenuity of Pelletier, Caventou, Sertuerner, &c. conferred upon mankind, by their discovery of the active principles of these articles! a discovery scarcely less important than that of the circulation of the blood. It is moreover but a short time since nux vomica was suffered to moulder upon our shelves; but this neglected substance was destined to furnish, to the researches of Fouquier results capable of leading to the consummation of the most important purposes. This distinguished physician has ascertained that in nux vomica we possess a most efficient means of treating paralysis, a disease which, under all circumstances, is exceedingly difficult to manage, and which, under our former resources, too often baffled our best directed efforts. Chemistry has moreover taught us that these important properties reside, in a concentrated form, in a peculiar substance which has been designated strychnine. It is with a view of adding our feeble weight of testimony to that which has been already furnished in favour of the remedy in the treatment of paralysis, that the following cases have been drawn up. The results which they have furnished have tended much to heighten our faith in the efficacy of the article, and we shall feel pleased if the communication of our own experience should incite others to make trial of it under similar circumstances.

The first case we shall detail is one of hemiplegia of the whole of the left side of the body. The individual was a male, aged about fifty, who was employed as a boat hand. He was placed under our care about the 20th of July, 1829; and, from all the particulars of his case which we were able to collect, it appeared that he had been very suddenly attacked with the disease, about a month previously, whilst engaged in cutting wood. He was seized with violent pain of the head, left arm and leg, fell down in a state of insensibility, to which succeeded in a short time a total loss of sensation and motion of the leg and arm, and double vision. He was still in this condition when we first saw him, with the exception that the double vision had disappeared, and he was so far sensible, as to reply rationally when addressed in a loud voice. There was no febrile disturbance, no impediment in the powers of speech, and the principal difficulty consisted in a loss of sensation and motion on one side. The leg and arm could be violently pinched or pricked without the patient evincing the slightest feeling, and the only pain he complained of was in the head and back of the neck.

He was ordered an active cathartic of calomel combined with jalap, principally with a view of creating a revulsive impression from the head to the lower intestines. Directions were also given to have his head shaved and blistered, and to have sinapisms applied to the legs.

21st. The medicine has operated, and the blister has drawn well, but without producing any improvement in the condition of the patient, except a slight amelioration of the pain of the head and neck. He is restless, and his mind somewhat wandering.

22d. The same condition. Cathartic directed to be repeated, and cups to be applied to the nape of the neck, the part afterwards to be covered by a blister.

23d. No improvement. Ordered sinapisms to the legs, and stimulating frictions to the paralytic members.

24th. The same condition continuing without any amelioration, we resolved to put him upon the use of the strychnine. The following was therefore directed: ℞. Strychnine, gr. vj.; alcohol, ʒi.; of which six drops were administered morning and evening.

25th. The dose of the medicine was increased to ten drops twice a day.

26th. Experienced this morning considerable spasmodic action of the muscles of the paralytic members. Mentioned the circumstance without being questioned, and compares the sensation to that which might be occasioned by living animals leaping in the flesh. No affection of any but the paralyzed muscles. Complains for the first time of pain when pricked with a pin. Medicine to be continued.

27th. Slight improvement. Complains of pain in the back of the neck. Ordered a blister to be applied to that part; tincture of strychnine to be increased to fifteen drops.

28th. Pain relieved. Can flex the leg slightly without assistance. The sensibility is also improved. Has had twitchings of the muscles of the arm. The paralytic leg and arm have become œdematous. Medicine to be continued.

29th. The improvement is progressive. The leg when pricked suddenly was flexed with great force. Arm, however, in nearly the same state.

30th. Can flex the leg to a right angle with the thigh, and again extend it. Has had twitchings of the arm and leg. The same prescription continued.

31st. Further improvement. Can flex and extend the leg with great freedom. No perceptible improvement of the arm.

August 1st. The improvement is progressive. Medicine to be increased to eighteen drops three times a day.

2d and 3d. Improvement continues. The muscles of the arm affected still more with spasm. Medicine increased to twenty-four drops.

4th. The condition of the leg continues to improve. The arm, however, remains in nearly the same state. From this time the amelioration was uninterrupted; and at the expiration of about a week he began to walk with the assistance of a crutch, and in a short time the power of motion in the leg so far improved as to enable him to walk to any part of the city. He finally recovered sufficiently to be sent into the country. At the time of his departure, however, the arm had not regained its powers, and had undergone but a very slight amelioration. Since then we have not been able to learn any thing of his situation.

This case is calculated to furnish some very important deductions relative to the administration of strychnine in cases of paralysis. From the general phenomena exhibited during its progress, as well as the nature of the attack at first; the complete loss of sensation, succeeded almost immediately by a total loss of motion, on one entire side of the body; the mental imbecility and wandering, which continued even throughout the whole course of the disease, all conspire to render it almost certain that the hemiplegia originated from an extravasation of blood in, or upon, some part of the brain.

This was indeed our opinion of the case from the period it first came under our attention. Under these impressions, the indications seemed to be to subdue local irritation by cups and blisters, and to create a revulsive impression from the brain to the bowels and extremities, by means of drastic cathartics, and sinapisms applied to the legs. We had always thought, with Andral and others, that nux vomica, strychnine, or brucine, could not be used with any benefit in cases of paralysis arising from a recent attack of apoplexy. We had even publicly deprecated the practice, in our lectures, as fraught with danger. It was therefore only after we had used the other means, without any apparent benefit, and had, from the general aspect of the case, considered it one of a desperate character, that we resolved to give the strychnine a trial, not with any hope of advantage, but principally with a view of testing its effects upon the constitution, under similar circumstances. The results disappointed our expectations, and have tended somewhat to modify the opinion we had advanced. We are however far, even now, from considering the remedy appropriate to the generality of cases of paralysis proceeding from recent attacks of apoplexy. On the contrary, we still think that, in a majority of them, it would not only fail of success, but would prove prejudicial, if used before the proper preparation had been made by depletion. What, in effect, is the condition of the brain under such circumstances? It is at first compressed by the extravasated blood, and this compression is of itself sufficient to give rise to paralysis. But, in addition to this, the extravasated blood, acting upon the principle of a foreign body, produces a constant source of irritation to the adjoining portion of the brain; an increased determination of blood takes place to the point; its nutrition becomes modified, its texture softened, and its cohesive power broken up. This condition cannot therefore fail to augment the paralysis; and, while it continues, we can hope nothing from the stimulating influence of strychnine. Direct depletion and revulsion are the grand hinges upon which the whole of our treatment must turn, and by no other procedure can we hope to relieve our patient. But, in process of time, the condition of the organ becomes, by a series of changes, very much altered. We know, from attending to the pathological condition of the tissues and organs, that a speedy effect of irritation is to give rise to a ramollissement, or softening, more or less extensive. We also know that, after a time, under certain modifications of the same process, new molecules are elaborated, coagulable lymph is deposited in the midst of the pre-existing molecules, the rudiments of vessels permeate this new product, it becomes organized, grows gradually more and more compact; and, in cases of apoplexy, finally forms a complete cyst, or membrane, surrounding the extravasated blood; thus completely isolating it from the brain, and cutting off or counteracting its injurious influence upon that organ: until this is effected, a link in the chain of influence between the brain and a portion of the nerves is broken; and, as the latter derive their controlling power from the former, it necessarily follows that, while this severed link remains unrepaired, a paralysis more or less extensive must exist. Strychnine, under such circumstances, cannot repair the breach, and therefore has no power to remove the influence which it exercises upon the muscles. But so soon as the resources of the living organization have, by setting up the changes which have been pointed out, restored to a certain extent the injury which has been sustained by the brain, the parts have acquired a condition which warrants us in hoping something from the stimulating influence of that article. But it may be asked, why is there any necessity for resorting to such adventitious aid after the lesion of the organ has been repaired? We would reply, for two reasons: 1st. That the integrity of the organization is not completely restored; consequently, we cannot expect that the integrity of its operations will be renewed without assistance. 2d. That, from the long quietude, or repose, to which the paralytic muscles, or rather nerves, have been submitted, the brain does not, when restored, regain immediately its controlling influence over them, which it only retains by degrees, and by the aid of some agent which possesses the power of exciting in a special manner the nerves themselves, so as to exalt their vital properties to that degree which is essential to enable them to feel and act under the influence of the brain. Do we not, in effect, sometimes observe the muscles, even where the brain possesses its perfect integrity, lose their power of acting, merely from long-continued repose? Do we not find them becoming relaxed, wasted, and enfeebled, in the inactive and sedentary, merely from the want of employment? This can only be ascribed to the controlling agency of the brain becoming weakened, because it is not exercised, or to the susceptibility of the nerves to the empire of that organ being diminished, from their being suffered to remain for a length of time in a quiescent or inactive state. The parallel, we think, holds good with paralysis; and, under the circumstances pointed out, the efficacy of strychnine, in restoring the powers of sensation and motion, depends entirely on its peculiar property of exciting the nerves, and thus exalting their vital powers to that degree which is requisite to enable them to feel and react under the empire of the great nervous centre. If these views be correct, they fully explain to us the futility, or even danger, of administering the article in question in that form of paralysis which succeeds apoplexy, before sufficient time has elapsed for the changes which have been pointed out to effect the restoration of the part, and the good effects which we sometimes have reason to hope from it, after they have produced their full effect.

Another phenomenon was observed in this case, as it has been in many others,—the limitation of the tetanic contractions of the muscles to the paralytic members. At no period of the disease was any thing of the kind observed on the opposite side. The same was true of an œdematous affection which took place in the paralysed leg and arm, shortly after we began the administration of the strychnine. It would be difficult to offer a satisfactory explanation of either of these phenomena. We cannot suppose that the medicine could exercise an exclusive influence upon the paralysed nerves, without affecting those which are in a healthy state. It must operate upon both in an equal degree; and we can afford no more satisfactory explanation of the spasmodic action in question, than upon the supposition that the nerves become unusually excited, while the actions which they communicate to the muscles are deprived of the regulating influence of the brain, which we have seen is cut off in the manner above pointed out: hence they are thrown into irregular, convulsive motions, while the healthy muscles act regularly. But it may be urged against this hypothesis, that the healthy, as well as the diseased muscles, sometimes experience the same irregular actions. In reply to this objection, we would state that, under such circumstances, something has transpired to break up or derange the natural harmony which directs or regulates the controlling influence of the brain over the nerves, so that the natural susceptibility of the one or the other is modified, or that some irregularity takes place in the transmission of the influence of the one through the other; and, consequently, irregular discordant contractions are the necessary result. How often indeed do we find the muscles, even in the healthy state, becoming afflicted with violent cramps or uncontrollable tremors, from over-exertion or fatigue? and is it not manifest that, under such circumstances, some derangement of the kind to which we have adverted takes place? We are free to confess that we can offer no other solution of the question which is at all satisfactory to ourselves.

As to the œdema, it is a question whether it should be considered as a consequence of the paralysis, or of the operation of the strychnine. We can readily conceive how a paralysis of the muscles may, by depriving the veins of that presence and support which is partly instrumental in propelling the blood through them; and how the venous trunks, by becoming thus distended, may, by being unable to receive and circulate their usual quantum of fluid, occasion the œdema of the members. But in the case before us, as well as in one or two others which we have witnessed, although the paralysis had existed for a length of time, (in one more than a year,) no œdema made its appearance until after the strychnine had been administered. Supposing then the medicine to have been instrumental in producing it, what rationale can we offer of the fact? There are some other articles of the materia medica (for instance, arsenic) which possess the power of producing similar serous effusions. It is difficult, however, to conceive how any of these articles can produce such effects. Can it be by enfeebling the action of the heart and arteries? We think not; for in many cases a febrile condition exists, with frequent, hard, and strong pulse. Is it by altering the condition of the capillary vessels, and modifying their operation, so as to destroy the harmonizing relation which exists between the arterial capillaries, by which the fluids in question are exhaled, and the venous and lymphatic radicles by which they are absorbed? This we consider a more rational solution of the question, inasmuch as we have generally observed that the administration of the medicine is productive of great pain and soreness of the common integuments, which frequently continues long after it has been left off. Irritation of the capillaries, produced by the influence of the strychnine, is therefore the only rational explanation we can offer of the phenomena in question. But this does not by any means explain why it is that the œdema is confined to the paralytic members. We can only offer a conjecture upon this point,—that the capillaries being irritated, and, with the veins, deprived of the support afforded by the surrounding muscles, œdema will take place more readily than where the muscles act, and, by the compression they exercise upon these vessels, propel the fluids through them.

The next case we shall detail is one of a very different character.

Thomas Wood, aged twenty-eight years, was admitted into the Charleston Alms-house Infirmary, on the 18th of October, 1829, labouring under general paralysis. Of his precise condition at the period of his admission we are not acquainted, as we were not at that time attached to the institution. One thing however is certain, that he was completely helpless, and we believe his general health was very much impaired, from the intemperate use of ardent spirits, and the exposures and privations incident to his habits. About the middle of January, 1830, when he first came under our observation, his general health had improved considerably under the treatment to which he had been submitted, but the paralysis had undergone but little or no amelioration. His legs and arms were so completely powerless as to render him incapable of helping himself, and whatever he took by way of food or medicine had to be put into his mouth by another person. His legs were drawn up to a right angle with the thighs, and could not be straightened. His bowels had moreover so far lost all power as to be incapable of expelling their contents, except when inordinately excited by stimulating enemata. The state of the patient could not be attributed to any thing like extravasation within the cranium, as he never had suffered any thing which could lead to a suspicion of such an occurrence. His previous habits, as well as the general aspect of the case, furnished a strong presumption that it originated from the long-continued and intemperate use of bitter beer and ardent spirits, especially gin, which had probably been adulterated with acetate of lead. That this was the case we are disposed to infer, independently of other considerations, from the fact, that we have met, in hospital practice, and amongst the poor, with a number of cases of paralysis, and have generally found that the subjects of these attacks have been persons addicted to the immoderate use of inferior gin and beer. These cases have, moreove, all presented the usual manifestations of paralysis from lead.

Taking this view of the case, we resolved to try the effects of strychnine, administered in liberal doses. He was accordingly directed to have daily a strong aloetic injection for the purpose of unloading the bowels, to be followed, after the operation was over, by half a grain of strychnine, suspended in a small quantity of mucilage. He was also directed to take the twelfth of a grain of the same medicine night and morning. This treatment was instituted on the 15th of January, and was continued until the 24th. On the 16th a splint similar to Pemberton's was applied to the left arm by way of experiment, but, after being worn for some time, it appeared to be rather prejudicial than advantageous, and was consequently omitted.

24th. The strychnine, in the doses above mentioned, was directed to be given thrice a day. The aloetic injection and the half-grain of strychnine to be continued as before. On the 26th the medicine was increased to the sixth of a grain night and morning. The compound aloetic pills were also directed every night, in sufficient doses to excite the lower bowels. Strychnine injection still continued. No further alteration was made in the treatment until the 8th of February, when the medicine was increased to three pills, of the twelfth of a grain each, night and morning. The aloetic pills and strychnine injection to be continued as above. A carved splint, long enough to extend from the nates to the heel, and also bound upon the posterior part of the thigh and leg, on one side, with a view of overcoming the flexed position of the member. After using it, however, for several days, without any benefit, it was abandoned. On the 16th, in addition to the other remedies, we directed the muriated tincture of iron with a view to its tonic effect, and it, with the other remedies, was continued until about the middle of March.

For several days after the strychnine was first administered, very little change was observed in the condition of the patient, and the usual tetanic contractions were scarcely observable; nor were they considerable at any period during the treatment. In the course of a fortnight a marked improvement was observable. The patient began to flex and extend his arms with facility, and could grasp any thing in his hands with considerable firmness. From this time, his improvement was progressive, but slow. His bowels soon began to act with more freedom; his ability to move his limbs increased, and in a short time he so far recovered the use of his arms as to turn and move himself in bed, and take his food and drink without assistance. By the 1st of March the mobility of the members had become so far restored, that nothing seemed to prevent him from walking but the flexed position of the legs and a want of confidence in his own powers. These difficulties were gradually surmounted by means of frictions and exercise; and at the present time, though he still experiences a little stiffness of the members, he can walk without assistance, and descends and ascends almost daily a long flight of stairs. The bowels have been for some time past in possession of their natural tone, and evacuate their contents without the aid of medicine. The general health of the patient is entirely restored.

This case exhibits to us many features of an important character: the cause by which it was produced; the great extent of the paralysis, rendering the patient completely helpless, and especially the implication of the muscles of organic life, as exemplified in the paralysis of the rectum, are considerations which deserve comment.

We have already stated our reasons for supposing the disease to have been produced by lead, employed in the adulteration of the liquor which the individual had been in the habit of using immoderately. The operation of this cause was probably assisted by the exposure, the irregular diet, and other accidental circumstances to which his intemperate habits exposed him. But we are here met by a question of considerable interest: how do the salts of lead operate in producing this paralysed condition of the muscles? To this it is not an easy matter to reply satisfactorily, in the present state of our knowledge. One thing however is certain, that these preparations exercise an influence directly debilitating upon the animal organization; or, in other words, that they diminish the nervous susceptibility, and thereby diminish or modify irritation in the nerves themselves, as well as in all the tissues to which they are distributed. If, with the Italian school, we divide all agents into stimulants and counter-stimulants, lead would fall under the latter class; a situation to which its effects on the constitution clearly entitles it. If we are asked for proofs of this, we will only reply, that they are furnished in great abundance in the daily employment of the article in the treatment of diseases, in its soothing influence upon inflamed surfaces, in its power of controlling the exalted irritation of the mucous membrane in fever, in moderating bronchial irritation in chronic catarrh and phthisis pulmonalis, in arresting hemorrhage, &c. It is therefore in virtue of a similar operation upon the nervous and vascular systems, long continued, and carried to an inordinate extent, that the salts of lead occasion paralysis. This it may effect by being taken into the stomach, inhaled by the lungs, or applied to the skin. In either case its action seems to be exercised directly upon the nervous filaments which preside over the functions of the several tissues to which it is first applied. We shall endeavour to illustrate our proposition by considering those cases in which the lead has been taken into the stomach.

The stomach and intestines derive their nerves from two sources or systems; the one ganglionic, coming from the great sympathetic, and subservient to circulation, secretion, &c.; the other from the pneumogastric, destined more especially to preside over the contractions of the muscular coat of the tube. These form a free and intimate connexion with the spinal and other nerves, by means of numerous anastomosing branches; so that whatever affects the one must have its influence not only extended to the others, but even to the spinal marrow, and the parts within the cranium. Lead therefore applied to the mucous surface of the alimentary canal, and exercising upon it a directly counter-stimulant impression, two important consequences are immediately developed: 1. The nervous filaments which regulate contractility, circulation, secretion, &c. are debilitated; the capillaries, deprived of their nervous influence, are unable to propel their contents forwards; a congestion consequently takes place in these vessels, the harmony of the circulation is thus deranged, and the secretions diminished, suspended, or perverted. 2. The filaments which control the muscular coat being submitted to a similar impression, that tunic becomes enfeebled or paralysed, and, when these conditions are developed in a considerable degree, all the phenomena of colica pictonum are manifested. By an extension of this influence still further, consequences of a still more formidable character are produced. Where the impression made by the counterstimulant influence of the lead is intense, or when it has been maintained for a length of time, it is finally communicated to the spinal marrow, which thus having its powers enfeebled or paralysed, the parts which it, as a great nervous centre, controls and regulates, must suffer in a proportionate degree. This we consider as the train of sequences which attends the formation of paralysis from lead; an opinion which seems to be justified as well by the phenomena of the disease, as by the state of the intestinal tube in those who have died affected with that malady. What, in effect, are the first symptoms which arise from the employment of the article in question? The secretions are suspended, and the muscular coat of the intestine is paralysed; hence an obstinate constipation of the bowels ensues. To this succeeds pain, because the congestion of the capillaries, occasioned by the diminution of their contractile or propulsive energies, together with the retention of the indurated fæces, give rise to irritation, which, in many cases of colica pictonum, is strongly marked. Finally, the nervous centre becomes affected, and from it the influence is extended to the muscles of animal life, which become enfeebled or paralysed. This view of the pathology of the disease not only comports best with its phenomena, but also with the results obtained in its management. It has been most satisfactorily ascertained that those remedies are most successful in the treatment of paralysis from lead which exercise a powerful, stimulating impression upon the nervous system, as electricity, galvanism, frictions, nux vomica and its preparations, brucine, rhus toxicodendron, arnica, &c. This was strongly exemplified in the second case, already detailed. We have seen that the paralysis not only implicated the muscles of animal life, but that the lower bowels were so much affected as to render them incapable of performing their office, except when excited by powerful stimuli. It was under these circumstances that the half-grain of strychnine was administered by injection, with a view of acting directly upon the affected part. Under its employment the contractility and secretions of the tube were gradually restored; and, in proportion as this restoration took place, the intestine regained its wonted power. The influence of the medicine, moreover, which was administered by this process and by the mouth, was next communicated to the spinal marrow, or nervous centre, and from thence to the nerves which supplied the paralytic muscles, which, being invigorated by this new impression, were restored to their former power. This is the exposition of the phenomena of the cure and its treatment, which, after watching its progress, and reflecting upon the circumstances attending it, we feel ourselves warranted in making. Whether our views be correct or not, the different articles which have been mentioned are certainly the most efficacious that can be administered in this form of paralysis; and, under proper management, we believe that, in such cases, it will seldom disappoint our expectations. In proof of its efficacy we might adduce several other cases, less formidable in their nature, but originating in similar habits, and under similar circumstances.

John Hood, aged thirty years, was admitted into the Almshouse Hospital, on the 8th of June, 1830, affected with paralysis of the forearm and hand. The powers of motion were almost entirely destroyed, and sensation was so far extinct that the part could be severely pinched without occasioning pain. He took the strychnine in the doses employed in the preceding cases, and, by persisting in its use for about a fortnight, using at the same time frictions and pumping, he was relieved. The habits of this individual were intemperate; and it is highly probable that the affection of the arm proceeded from the influence of lead employed in adulterating the liquors which he drank.

Daniel Reardon, aged fifty-two years, came into the hospital on the 20th of July, 1830, with the forearm and hand paralysed, and was put upon the same course of treatment, which afforded speedy relief. At present he moves his arm and hand with great freedom, and only complains of a slight degree of weakness in the part. His habits are intemperate, and he states that he has been accustomed to drink very freely of common northern gin. We can assign no other cause for his disease than that which has been offered in the above cases.

In conclusion, we think it is undeniable that, in the above cases, the good effects of the strychnine were strikingly manifested, and that, under similar circumstances, much may be expected from the judicious employment of that article. We are at present using it in some other cases, but are unable as yet to determine what will be the result. We will take this opportunity of observing, that we have employed strychnine with much apparent benefit in some forms of chronic irritation of the alimentary canal, especially in persons who were affected with habitual constipation of the bowels. It should, however, always be borne in mind that its natural tendency is to irritate the mucous membrane.

THE EPIDEMIC CHOLERA.

On the Etiology of Epidemic Cholera. By ALEXANDER TURNBULL CHRISTIE, M.D., of the Honourable East-India Company's Service; Member of the Royal Asiatic Society of Great Britain and Ireland, of the Wernerian and Royal Medical Societies of Edinburgh, &c.

THERE has been always much difference of opinion respecting the nature of those morbid conditions to which all the symptoms of cholera are referrible; or, in other words, of its proximate cause. This was to be expected, so long as we continued in ignorance of the morbid changes which accompany, or form part of it; but now that we are in possession of a great mass of well-established facts, relating both to its autopsy and symptoms, we may proceed with more confidence to trace its causes, and to determine whether it is subject to any uniform laws.

Overlooking those theories, or rather hypotheses, which attribute all the phenomena of cholera to an immaterial something,* to some peculiar and undefined influence of electricity in the blood and textures of the body, to concussion of the brain,† to torpor of the extreme vessels of the liver, or to some other equally obscure cause; let us proceed to examine the more prevalent opinions of the day. These refer the disease to diminished nervous energy; to congestion of the veins of the viscera; to inflammation of the brain, of the spinal marrow, or of some portions of the mucous membranes; or to the altered state of the blood.

To say that any disease is owing to diminished nervous energy, is, I conceive, only using a peculiar phraseology, instead of furnishing a scientific explanation of symptoms. No one will say that he knows any thing of diminished nervous energy except by its effects. Many however conclude, from the existence of certain phenomena, that there is such a thing as diminished nervous energy; and the next moment they turn round, and have recourse to it, for the explanation of the very phenomena from which its existence was at first deduced.

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* Bombay Report.

† Kennedy on Cholera.

But it appears to me that we can with less propriety attribute cholera to diminished energy of the nervous system, than almost any other disease with which we are acquainted; for, in cholera, the external senses, the voluntary, and some involuntary motions, continue, in a large proportion of cases, unimpaired; and one of the most important and extensive secretions, viz. that of the mucous membranes, far from being diminished, is always prodigiously increased. Even the other secretions are not invariably diminished; and, when they are so, we can easily perceive that it does not arise from any defect of the nervous system, but from a deficiency of the circulating fluid, which has been withdrawn from these organs, and determined towards the mucous membranes, the seat of increased action.

Cholera is generally described as being accompanied by great debility of the circulating system. This, I suspect, is not strictly correct; for, although a small pulse is almost an invariable symptom of the disease, it is by no means a proof of arterial debility; but merely that the quantity of blood circulating through the vessel has been diminished. It is thus conceivable how an artery, though containing a smaller quantity of blood than usual, may have its action actually increased. Were the smallness of the pulse owing to general debility of the circulating system, we might expect it to arise more gradually, and to continue longer after the removal of the disease, than we find to be the case in cholera. A person enjoying good health is attacked with the disease: his pulse becomes rapidly smaller; his features collapse from diminution of blood; and, if the disease prove fatal, the blood is found accumulated in the internal vessels. Should he recover, the pulse immediately regains its fulness, and sometimes has its action much increased. These facts naturally lead to the conclusion, that the smallness of the pulse is not owing to debility; but only to the circumstance of the blood having been withdrawn from the surface, and determined to the interior.

How the diminished nervous energy produces increased secretion from the mucous membranes, congestion, pain in the abdomen, spasms, &c. we are not told; one of the advocates* of the hypothesis merely says, "that the depravation of nervous influence thus produced extends to all the functions, and immediately produces the disease." Well may we say with the reviewer, in the Edinburgh Medical Journal, that "this is a complete assumption, unsupported by any proof, evidence, or any plausible pretext whatever." I have thought it necessary to dwell thus long upon this hypothesis, since, if adopted, it might be liable to lead to an injurious mode of practice. One of the most powerful and universal remedies in the disease is bloodletting; but it is difficult to understand upon what ground it could be recommended in a malady depending upon diminished energy of the nervous system.

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* Mr. Orton.

The theory which refers all the phenomena of cholera to venous congestion, is much more entitled to attention than that we have just been considering. Venous congestion is present in all severe and fatal cases of the epidemic; but this alone is not a proof of its being the proximate cause. By the term proximate cause, we mean that morbid condition without which the disease could not exist; which, in fact, constitutes the disease, and to which all the other morbid changes, as well as the symptoms, are referrible. It necessarily follows that it must not only be of invariable occurrence, but it must always precede all the symptoms; must form the very first link in the chain of morbid phenomena which accompany the disease, and must be proved to be an adequate cause of these phenomena. Does the venous congestion in cholera answer all these conditions? I will shew that it does not. In a great proportion of cases, the first symptoms are vomiting and purging, with a sense of uneasiness at the epigastrium; and these often continue for a long time, before any others make their appearance. It often happens that a patient ejects a large quantity of serous fluid, by vomiting and stool, when, at the same time, his circulation is not much disturbed, and there are no other symptoms (except perhaps anxiety) to indicate the presence of cholera. No one, however, doubts of the identity of the disease; and the practitioner does not hesitate to treat it *secundum artem.* Now, in such a case, there is surely no indication of venous congestion, and it therefore cannot be the first morbid change in the disease. So little appearance of congestion is there in the very first stage of many cases of cholera, that the pulse is then full and strong; whereas, had the blood left the surface to be accumulated in the internal parts, the pulse must necessarily have been small and weak. But we can produce an artificial case of cholera, which differs from the epidemic only in degree, and we can thus carefully study its progress, and the order of its phenomena. A drastic purge acts upon the gastro-enteric mucous membrane, occasioning an increased secretion; nausea, and uneasiness in the bowels, are produced; abundant dejections are expelled, accompanied sometimes by vomiting, and the blood, at length, retires from the surface towards the viscera, until the operation of the medicine ceases. No one will, surely, pretend that the first effect of the physic is to withdraw the blood from the surface, in order to supply material for the flow of excretions that are afterwards to take place; besides, such an absurdity is, as we have already stated, exactly the reverse of the order of the phenomena. The same reasoning applies to the true cholera. But, allowing for a moment venous congestion to be the proximate cause, let us inquire how it would account for the morbid appearances, and the symptoms of the disease. A great accumulation of blood in the viscera of the abdomen may be supposed capable of forcing out, as it were, a large quantity of fluid into the alimentary canal; but, if such were its mode of action, why are all the constituent parts of the blood not forced out? why is the colouring matter left behind? why is the constitution of the cholera secretion different from that of the blood? But, if this difficulty occurs in regard to the secretions of the stomach and intestines, how much greater is the difficulty which presents itself respecting the cause of that thrown out from the inner surface of the bladder, where there is seldom any congestion, and from the surface of the eyes, and the lining membrane of the mouth, which are far from the seat of the cause to which they are supposed to be owing. Lastly, this theory affords us no reason for the perspiration, which is a very common symptom; on the other hand, it withdraws the circulating fluid from the surface, in order to supply a *cause* for the increased secretion from the gastro-enteric mucous membrane, and thus leaves no cause whatever for the secretion of the skin.

In regard to the theory which attributes the proximate cause to inflammation, suffice it to say, that inflammation in any part of the body is of very rare occurrence, in cases of the epidemic.

The altered condition of the blood has sometimes been supposed to be the proximate cause of the disease. But it often does not occur until the other symptoms have been fully developed, and therefore does not answer one of the conditions of a proximate cause; and it is sometimes met with in other complaints, when it is not accompanied by any symptoms similar to those of cholera. I do not believe that the changes of the blood arise entirely from deficient oxygenation; for the effects of unoxygenated blood are very different from any thing we observe in cholera. Mr. Brodie says, that "dark-coloured (unoxygenated) blood, which has been transmitted through the circulating system during the suspension of respiration, would seem to act like a narcotic poison upon the brain. *No sooner does it enter that organ, than deleterious effects are immediately produced;* the animal falls into a state of stupor, the pupils of the eyes become dilated, the respiration is laborious, the muscles of the body are convulsed, and the animal dies poisoned by its own blood." Very different is the case in cholera; for the patient often continues perfectly sensible, his breathing free, and his muscles obedient to his will, for *many hours*, during which dark-coloured blood has circulated through his veins and arteries. Although the blood is variously altered, and darker than usual, yet I doubt much whether these changes be owing merely to imperfect decarbonization of the circulating fluid. The only reason we have for apprehending such to be the case, is the statement of Dr. Davy, who says that "the air expired from the lungs of the sick with cholera did not contain more than one third of the carbonic acid gas contained in the breath of healthy people." But we are not told by what experiments this was ascertained, and whether it was the result of extensive observation; and, besides, greater slowness of the circulation may have occasioned this deficiency to a certain extent; although the blood which actually passed through the lungs was perfectly decarbonized. The dark colour of the blood, therefore, was probably owing to some other cause than to its not having been freed from its carbon; and, upon any supposition, it could not serve to explain the different symptoms of the disease.

It is much to be wondered at that, in all the observations that have been published on the pathology of cholera, so little weight has been given to the disordered condition of the mucous membranes, which forms an invariable character of the disease. This appears the more surprising, when we consider the importance of the mucous membranes in the animal economy; their very great extent; their great sensibility; the numerous sympathies that exist between them and every other part of the body; the many instances in which their diseases have become epidemic; and the invariable derangement of all, or at least of some portions of them, in cholera.

Although many medical men have accurately described the various appearances of the secretion thrown out by the stomach and intestines in cholera, they have very seldom extended their observations to the diseased action of the gastro-enteric mucous membrane, by which these secretions are produced. A very common, and perhaps a natural prejudice, inclines us to consider the intestinal tube merely as a conduit for the passage of excremential and peccant matters, and that all kinds of fluxes are only efforts of this tube to rid the bowels of diseased substances, the presence of which is prejudicial to health. Farther, there appears to be a disinclination, with many pathologists, to admit that the gastro-enteric mucous membrane is ever the seat of the pathological cause of a disease. Hence it is that cholera morbus has been referred to the irritation of diseased bile, diarrhœa to diseased matters irritating the intestines, and Indian cholera and dysentery to disordered states of the liver, of the brain, nervous system, &c. It is certain that cholera was not considered to be a disease *sui generis* until it occurred as an epidemic. Previous to that period it was generally denominated flux; and, by the natives of India, it is simply denominated vomiting and purging. Under these names, it is a disease that has been well known at very distant periods and places. But, as soon as it became epidemic, its name was altered, and its nature confounded. The discovery of its pathological cause was considered by many to be impossible; and those who did theorizé upon it referred it to almost every diseased condition of the human frame, except that to which it had formerly and frequently been attributed.

I have already demonstrated, on another occasion, that mucous membranes are liable to two distinct morbid affections, viz. inflammation and catarrh; and that either of these may occur alone, or conjoined with the other. Without entering very fully into the views respecting the pathology of mucous membranes, which I have explained in the work alluded to, and which I believe have been very generally adopted, it will be necessary to give some explanation of them, in order to make their application to the pathology of cholera properly understood.

It has been stated as a general law, by several eminent authors, that inflammation of mucous membranes is accompanied by increased mucous secretion; and pathologists almost invariably attribute catarrh to an inflammation of the mucous membrane in which it occurs.* This, I apprehend, is far from being correct; for are there not numerous examples of inflammation of a muçous membrane without increased secretion, and of catarrh without inflammation? We have examples of the former in ophthalmia, inflammatory sore throats, some cases of gastritis, and perhaps also of enteritis: of the latter, in a few cases of common catarrh, in diarrhœa, and also (as I shall have occasion to shew in a future part of this Essay) in Indian cholera.

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* This is the opinion of Laennec. Vide De l'Auscultation Médiate, t. ii p. 65. It also appears to be Broussais' opinion.

Acute bronchitis frequently affords an example of simple inflammation of a mucous membrane, without increased secretion. In some cases of it, the secretions during the first stage are diminished; and then an increased secretion from the inflamed membrane always relieves the disease.* In the first stage of gastritis, and of enteritis, the secretions of the gastro-enteric mucous membrane are generally diminished; and these diseases also are relieved by an increased flow of the natural secretions of the membranes.

There are also numerous examples of catarrh without inflammation. Common catarrh of the air-passages, without inflammation, is familiar to every one. Diarrhœa generally does not exhibit the slightest symptom of inflammation; and in it the secretion of the enteric mucous membrane is increased and vitiated.

There is a species of diarrhœa endemical in some parts of the Southern Mahratta country, the symptoms of which are copious and frequent dejections of a serous fluid, a small pulse, and sometimes coldness of the skin, without the slightest symptom of inflammation. When it is of long continuance, however, inflammation generally supervenes; and the enteric mucous membrane, when examined after death, presents various diseased appearances. But, in one case in which it had existed for a very long time, and at length proved fatal, the mucous membrane of the alimentary canal had a blanched appearance, with only a few rose-coloured spots near the pylorus, and in the large intestines. It is most probable that these spots were not inflammatory, but what Billard calls "rougeur pointillée non inflammatoire." At all events, they were not of a magnitude that could account for the violent and long continued catarrhal affection that affected the patient.

There are some very valuable observations on this subject in M. Billard's work "De la Membrane Muqueuse Gastro-Intestinale," at page 358. He mentions that it is by no means uncommon to meet with cases, in which there are very abundant dejections of serous fluids, and in which no trace of inflammation can be detected in the mucous membrane of the primæ viæ after death. Among others, he describes the case of a priest, who was attacked with an intestinal flux, and passed different vitiated humours, for the space of thirteen days. He then died; and, upon examining his corpse, no appearance of inflammation was found in any part of the intestinal canal. He farther states, that the same thing is daily met with in the theatres of anatomy; and therefore justly concludes, that these fluid excretions from the bowels cannot be considered as indications of inflammation of the mucous membrane of the intestines.

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* Vide Hastings' Treatise on Inflammation of the Mucous Membrane of the Lungs, p. 161.

In the description of the symptoms and of the autopsy of the epidemic cholera, it has been mentioned that there is seldom the slightest appearance of inflammation; that the most prominent symptoms are copious vomiting and purging of a sero-fibrinous secretion; that no traces of inflammation could be detected in the mucous membranes after death; but that these membranes, the pulmonary and urinary, as well as the gastro-enteric, were all whiter than natural, and lined with a fibrinous secretion.

Let us now consider the effects of these two morbid affections, viz. of inflammation and catarrh, on the general system. These effects on the circulation are very different, and in fact completely opposite, acute inflammation being accompanied by increased action; whereas, in slight cases of catarrh of any portion of the mucous membranes, the circulation is scarcely, if at all, affected; and, in severe cases, both the size of the pulse and heat of the skin are diminished. This is so important in enabling us to explain the etiology of various diseases, that it will be necessary to shew that numerous proofs are not wanting to establish it as a general law.

It has frequently been observed, that simple diarrhœa, which is merely a catarrh of the mucous membrane of the large intestines, is accompanied by a weak small pulse, and a sense of coldness.

A powerful dose of physic, occasioning an abundant secretion from the bowels, is frequently followed by a small pulse, and coldness of the skin. This was illustrated in a most striking manner in the case of one of my own servants, a young Mahomedan, who had taken too large a dose of the croton tiglium, which occasioned hypercatharsis. His evacuations, after a time, consisted only of mucus and serum; his pulse was scarcely perceptible at the wrist; his extremities were cold, and his features contracted. He was in this state when I first saw him; and from all these symptoms I immediately concluded that he had an attack of the cholera. When I learned the true nature of his complaint, I gave him sixty drops of laudanum, and he soon recovered.

Simple catarrh of the nose, fauces, and air-passages, is always attended by chilliness and a diminution in the size of the pulse; but the influenza of 1803, which was a severe catarrh with inflammation, was denominated a fever on account of the increased action of the heart and arteries which characterized it.

These proofs, in support of the principle, that catarrh of any part of the mucous membranes occasions a diminution in the size of the pulse, and heat of the skin, will at present suffice. Many of a similar nature will doubtless suggest themselves to my readers; and I will now endeavour to trace the cause of the phenomenon.

As it is of importance, for the proper understanding of this part of our subject, to have clear notions of the power excited by the capillaries in the circulation of the blood, I will quote the following observations from the elegant work of Dr. Arnott on Natural Philosophy:

"We have seen (says he) that the heart keeps up a tension or pressure in the arteries, of about four pounds on the square inch of their surface, and with this force, therefore, is propelling the blood into the capillaries. If these last were passive tubes, constantly open, such force would be sufficient to press the blood through them with a certain uniform velocity; but they are vessels of great and varying activity: it is among them that the nutrition of the different textures of the body takes place, as of muscle, bone, membrane, &c.; and that all the secretions from the blood are performed, as of bile, gastric juice or saliva, &c.; and, to perform such varied and often fluctuating offices, they require to be able to control, in all ways, the motion of the blood passing through them. The capillaries of the cheek, under the influence of shame, dilate instantly, and admit more blood, producing what is called a blush; under the influence of anger or fear, they suddenly empty themselves, and the countenance becomes pallid; tears or saliva, under certain circumstances, gush in a moment, and in a moment are again dried up: if a person having inflammation in one hand be blooded from corresponding veins in both arms at the same time, twice or thrice as much blood will flow from the diseased side as from the other. Similar changes occur in many other instances. Now, the only mechanical action of vessels, capable of causing these phenomena, must occur in contractile or muscular coats; and, with reference to such action, it merits notice that arterial branches have always more of the fibrous or contractile coat in proportion as they are smaller.

"A muscular capillary tube strong enough to shut itself against the arterial current from the heart, is also strong enough to propel the blood to the heart again through the veins, even if the resistance on that side were as great as the force on the other. * * *

"It is capillary action which absorbs and moves the fluids of the classes of animals which have no heart. It must also be the power which moves the blood in warm-blooded monsters formed without hearts. There are cases of apparent death among human beings, where the heart remains inactive for days, and yet a degree of circulation sufficient to preserve life is carried on by the capillaries. In illustration of capillary action, we have also the absorption, by the lacteals, of nutriment by the alimentary canal; and perhaps, to a certain extent, the circulation of the blood in the livers of animals. In this last case, the blood collected by veins from the abdominal viscera, instead of going directly to the heart, is again distributed through the liver by the branches of the vena portæ, and is then again collected by ordinary veins, and carried to the heart: it thus moves through two sets of capillaries in passing from the arteries to the heart again.

The action of the capillaries is the cause of that singular phenomenon which prevented the ancients from discovering the circulation of the blood, viz. the empty state of the arteries after death. All the muscular parts of an animal, including therefore the contractile coats of vessels, retain their life, or power of contracting, for a considerable time after respiration has ceased, as is seen in the recovery of persons apparently drowned or suffocated; in the leaping of a heart taken from an animal just killed; in the actions resembling life which can be produced, by the agency of galvanism, in a body recently dead; but the fact is seen still more aptly for our purpose, in the total disappearance of a local inflammation after the death of the patient; for inflammation involves a gorging, or over-distention of the capillaries, into which, when the heart has ceased to press blood, the contractile force remaining in them, even under disease and in a dead animal, is sufficient to squeeze the blood out of them, and often to remove all trace of the malady which has killed. In ordinary cases, then, the capillaries throughout the body remain alive and active for a considerable time after breathing has ceased, working like innumerable little pumps, and emptying the arteries into the veins. As the red blood is their proper sustenance as well as stimulus, they work as long as there is any of it coming from the arteries behind them; except, however, the capillaries of the lungs, which soon cease to act, because, after breathing has ceased, they are filled with black blood, and are moreover compressed by the collapse of the chest:

and all the blood accumulates behind them. The capillaries may continue to be filled from the arteries, either in consequence of their elasticity opening them with what is called a suction power, or of an absorbent power dependent on life, like that of the lacteals and of the absorbents all over the body, and perhaps of the vessels in the roots of vegetables. When death is produced by lightning, or by the poisons which destroy all muscular irritability, the arteries after death are found to contain blood like the veins. In a living body, if an artery be tied, the part beyond the ligature is soon emptied into the veins, and becomes flat. The experiment has been made even upon the aorta itself."

It is an important law of the animal economy, that there is always a determination of blood towards a part whose action is increased. Let us suppose then the action of the minute vessels of any part to be increased in consequence of inflammation, a determination of blood will take place towards them; but, as the seat of this affection is in the capillaries which connect the arteries with the veins, it is evident that there can be no outlet for the unusual quantity of blood they now receive; it must therefore be propelled forwards with a heightened momentum, which, upon reaching the heart, will be communicated by it to every part and of the sanguiferous system, producing the quick and hard pulse, and hot skin, which accompany all severe inflammations. But very different effects must arise from the increased action of secretory vessels; for, since they discharge their contents upon open surfaces, the more powerfully they act, the greater will be the quantity of fluid withdrawn from the circulation; and the total quantity of it will consequently be diminished. Instead of general excitement, therefore, of the circulating system, as in inflammation, there must be symptoms of diminished action, or, to speak more correctly, the size of the pulse towards the surface will be lessened, from the arteries containing a smaller quantity of blood than usual. Let us suppose, farther, that the excretory vessels of the gastro-enteric mucous membrane have their action increased, or, in other words, are affected with catarrh, the current of the blood will be directed towards this membrane, to supply the expenditure, less will consequently be sent to the other parts of the body; the heart and large blood-vessels having the bulk of their contents in this way diminished, will contract with less effect, and their action will become languid. But we can scarcely suppose that in all cases the exact measure of blood required for the supply of the discharge will be directed towards the affected parts; and if too little be afforded, the catarrh will be of short duration;

if too much, there will be congestion. The latter is likely to occur in almost all severe cases; for, an impulse having been given to the flow of the blood towards the alimentary canal, more of it will probably be thus carried to the parts than is precisely equal to supply the increased secretion; and the surplus will therefore accumulate in the veins of the viscera. This state of things will continue until the unnatural drain, which had thus diverted the stream of the vital fluid from its usual course, is stopped, and the circulation, again set free, is enabled to distribute in due proportions its supplies to the remotest parts of the system. Thus we find that inflammation and catarrh are exactly opposed to each other; and, accordingly, many remedies which are employed against the former act by producing increased secretion, or a catarrh in the mucous membrane; many which are found useful in the cure of the latter occasion an inflammatory action. Of the former we have a familiar instance in inflammatory sore throat, which is relieved by an increased secretion from the mucous membrane of the affected parts; the latter is equally evident in the beneficial effects derived from the employment of opium and stimulants in the catarrhal cholera.

One reason, probably, why an accurate distinction has not hitherto been made between inflammation and catarrh, is that the former seldom continues for any length of time in a mucous membrane without exciting the latter, and *vice versa*. When they occur together, the state of the circulation will of course be modified according to circumstances: it will be increased, if the inflammation predominate; diminished towards the surface, if the catarrh predominate. Accordingly, we find that, in some cases of dysentery, the pulse continues tolerably full at the wrist, and the skin hot, while, in other cases, the pulse is nearly imperceptible, and the skin cold; the former being those in which the inflammation, the latter those in which the secretion, is greater.

From numerous experiments I performed upon dogs, for the purpose of ascertaining the mode of action of several of the more active medicines on the gastro-enteric mucous membrane, and which have been detailed in another work, I found that certain medicines, especially in large doses, increased the secretion of this membrane, at the same time rendering it white; and that others caused an inflammatory action. I also ascertained that if a stimulating medicine be made to act for a length of time upon one spot, it causes inflammation; whereas a short continuance of its action produces only increased secretion. In this way I observed that large doses of tartrate of antimony, of muriate of mercury, and of calomel, produced a great secretion from the gastro-enteric mucous membrane, and at the same time rendered it white; opium occasioned a red colour; and in some cases in which calomel had remained a long time in the stomach, it adhered to its inner surface, and produced patches of inflammation.

In June 1826, I gave a scruple of tartrate of antimony to a patient labouring under an acute pulmonic affection. In half an hour it caused him to vomit a large quantity of serous fluid; shortly afterwards he vomited three yards of a tapeworm, and, in the course of two or three hours, it produced several copious and perfectly watery stools. The size of his pulse was much reduced; his skin became cool and slightly moist, and in the course of twelve hours all these symptoms went off, and left him quite well. I afterwards gave similar doses of the medicine to three or four other patients, and in these it invariably produced watery vomiting and purging, coldness of the skin, a small pulse, and general debility.

It would appear, then, that a scruple of tartrate of antimony powerfully increases the secretion of the gastro-enteric mucous membrane, without at the same time inducing an inflammatory action. It consequently determines the blood towards the abdominal viscera, and thus reduces the size of the pulse and the heat of the skin. These effects it produced so powerfully, in one of the cases above alluded to, that a person unacquainted with the circumstances might have almost mistaken it for a case of cholera. This practice, I should think, cannot be always unattended with danger; for, were the medicine, instead of quickly passing through the alimentary canal, (and thus merely exciting the action of the excretory vessels,) to lodge in any part of it, there can be no doubt that its continued action would excite inflammation.

The above facts shew that the tartrate of antimony has not a direct sedative property, as some maintain: on the contrary, it powerfully excites the secretion of the gastro-enteric mucous membrane; and the small pulse, cold skin, and debility, are only secondary effects, which go off as soon as the increased secretion is checked.

The experiments of Brodie* and Magendie,† and the observations of various other writers,‡ prove that tartrate of antimony frequently produces inflammation of the gastro-enteric mucous membrane. In the experiments of Magendie, in which the inflammation was produced by tartrate of antimony, the œsophagus was tied, so as to prevent vomiting; which shews that the inflammation was produced by the continued action of the medicine on the mucous membrane. Other experiments are related by Brodie, in which large quantities of tartrate of antimony given to dogs produced no inflammation whatever.*

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* Vide Phil. Trans. for 1812, vol. 102, p. 205.

† Vide Orfila, Traité des Poisons, third edit. p. 458; also 479 et seq.

‡ Vide Billard, De la Membrane Muqueuse, p. 201 et seq.

If my reader has accompanied me attentively through the preceding (I am afraid rather tedious) investigation, I feel confident he will be prepared to admit the following conclusions.

1. Mucous membranes are liable to two distinct simple morbid affections; viz. inflammation and catarrh.

2. Catarrh consists of a diseased action of the secretory apparatus of a mucous membrane, which produces an increased and vitiated secretion, and is characterized by the membrane in which it occurs being generally whiter than natural, and by the quantity of the blood towards the surface of the body being diminished.

3. Either of these morbid affections may occur alone in a mucous membrane, or conjoined with the other.

It is worthy of remark, that almost all the remedies which have been found successful in the treatment of the epidemic cholera, are such as stimulate the arterial capillaries, and therefore promote the circulation of the blood; for we find, by the observations of Dr. Arnott, that these minute vessels have as much share in the circulation as the heart itself. Blisters, sinapisms, frictions, and heats, are applied to the surface; stimulating mixtures, laudanum, spices, ammonia, are given internally, all with the same view of exciting the action of the capillaries, and thus causing them to restore the balance of the circulation. It is not improbable that the action of the arterial capillaries, as well as of the heart, may be diminished by the altered state of the blood having deprived them of their natural stimulus; but that they are not *positively debilitated* has been already pointed out.

Let us now apply these principles to the explanation of the phenomena of the epidemic cholera. It has been already mentioned that the first link in the chain of morbid phenomena, in cholera, is a disordered state of the gastro-enteric mucous membrane, which occasions an increased excretion, or catarrh. As in all other similar affections, whether spontaneous or excited by artificial means, a determination of blood takes place towards the parts, the quantity of blood towards the surface is diminished; and, when the catarrh is sudden, severe, and extends to all the mucous membranes, it constitutes a powerful cause fully equal to produce collapse, and all the worst symptoms of the disease.

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* The preceding observations enable us to understand why some purgatives are said to be warm, and others cold; the former being such as simply stimulate the bowels, and excite their peristaltic motion; the latter those which occasion an increased secretion from their mucous membrane.

As it is of importance to demonstrate positively that the catarrhal affection always precedes all the other morbid phenomena in the disease, it will be necessary to enter a little into detail upon this point. It has already been shewn repeatedly that a disordered state of the bowels, very much resembling cholera, has frequently arisen from a powerful dose of physic; and, during the prevalence of the epidemic, a strong dose of a saline purgative has been often seen to act as an exciting cause. But the immediate operation of purgatives is to excite the secretion of the mucous membrane of the primæ viæ, which must, in such cases, therefore have been the first deviation from healthy action that took place. Moreover, cholera often commences with an insidious diarrhœa, without any other symptom. Can there be stronger proofs than these, that the first link in the chain of morbid phenomena is a catarrh of the gastro-enteric mucous membrane?

During the prevalence of cholera at Darwar, in 1826, a sepoy of the 5th regiment of Native Infantry was brought into hospital at seven A.M. of the 10th of May. He said he had been attacked with purging early in the morning, when on guard at the jail; that the first evacuations had been natural, but that the two or three last were like rice-water, which made him apprehend that he was about to have an attack of cholera. His pulse and skin were natural; his tongue was clean; and he had no other symptom of the disease. He took fifty drops of laudanum, and a strong dose of calomel and jalap, which soon produced several healthy evacuations; in other words, restored the healthy action of the enteric mucous membrane; and he had no return of the disease.

Next morning another sepoy, who had been on guard at the jail, was brought into hospital, with frequent white, watery purging. All the other functions were natural. He took a dose of physic and some laudanum, which soon restored the healthy action of his bowels; and in the evening he was so well that he intended to return to his duty the next morning. During the night, however, or rather early in the morning, he took a large draught of cold water and some buttermilk, which occasioned a renewal of the purging. When I saw him, at six o'clock A.M., he had been purged frequently, and had vomited two or three times; his evacuations being watery, with a few white flakes. His features were considerably collapsed; his pulse at the wrist extremely small. He had already taken fifty minims of laudanum. I immediately opened a vein in his arm, from which very dark-coloured blood flowed sluggishly, in a small stream, or in drops. The bleeding was continued until I had procured thirty ounces, when the blood became lighter coloured, his features brightened, and he expressed himself much relieved. He coughed two or three times, and appeared to breathe more freely than he had done before. The disease, however, had not been overcome; for, although his pulse had considerably improved, it was far from being of its natural fulness; he vomited once, and was purged two or three times. A strong blister was therefore applied to his abdomen, and sinapisms to his legs and feet; and during the day he took several scruple-doses of calomel, with camphor mixture and liquor ammoniæ. He slept a little during the night. Next day he had two or three feculent evacuations, and speedily recovered.

These two cases very clearly point out the nature of the disease. In the first case, and on the first day of the second case, there was evidently nothing more than catarrh of the entero-mucous membrane, and which was easily overcome by simple remedies. In the latter part of the second case there was the same catarrh of the enteric mucous membrane, but increased in severity, extending to the gastric membrane, occasioning the characteristic symptoms of cholera, and requiring for its cure the active remedies usually employed in that disease.

The following passage, forcibly illustrating this subject, is taken from one of Mr. R. H. England's Reports to the Madras Medical Board. "I have frequently," says he, "detected sepoys round an encampment, with diarrhœa unattended with vomiting, pain, or any other unusual symptom. This state, I have the strongest proofs to convince me, was the commencement of the cholera; as a few of these cases terminated fatally, with the usual symptoms of the disease. After a diarrhœa had existed several hours, I have in many cases found it resist every kind of remedy; the purging continued; the vascular action became impaired; prostration of strength ensued, and the patient sunk without any considerable pain. I have often asked these persons why they did not apply to me earlier; and the general answer was, that, as they found no great inconvenience from the diarrhœa, they deemed it unnecessary and improper to make a report of a circumstance so apparently trifling." Mr. Orton, in his Essay on Cholera, says, "This epidemic has frequently been observed to begin with a common diarrhœa, which has gradually assumed the form of cholera, so as to occasion a great difficulty in the diagnosis in the early stages." Similar observations have been made by numerous other medical men, which shew that the term cholera is with general consent often applied to a simple catarrh of the mucous membrane of the intestines, without any other symptom whatever being present.

MIDWIFERY.

Half-yearly Report of Cases in Midwifery, which have occurred in the Northern District of the London and Southwark Midwifery Institution. By C. Waller, M.D., Consulting Accoucheur to the above Institution, and Lecturer on Midwifery at 93, Bartholomew close, near St. Bartholomew's Hospital.

1833.	Number of Women delivered.	Sex of Children.		Born Alive.	Stillborn.	Presentation.
		Males.	Females.			
January...	47	20	27	45	2	45 Natural 2 Feet
February..	46*	26	20	42	4	46 Natural 1 Placenta & Foot
March....	51	29	22	51	0	49 Natural 1 Breech 1 Foot
April......	58†	33	26	57	2	57 Natural 1 Face to Pubis 1 Breech
May	41	18	23	40	1	40 Natural 1 Breech
June	49	26	23	47	2	Natural
Total......	291	152	141	282	11	* Case of twins. † Ditto.

Several of the above, reported as Stillborn, were Premature Births.

It is satisfactory to be enabled to state that, during the past half-year, there has been a continuance of that freedom from danger amongst the patients of the charity mentioned in my last Report. One patient only has died; her disease was confirmed phthisis, which made very rapid progress after the delivery of the child, the fatal termination probably hastened in consequence of her labour being preceded by a considerable discharge of blood.

Two cases of peritonitis have occurred; one severe and extensive, the other of a more mild character, and of less extent. They were treated and cured by the usual means, viz. the removal of blood from the arm, followed by the application of leeches to the abdomen; after which a chamomile poultice enclosed within a flannel bag, and repeatedly changed, in order to keep up continued warmth and moisture, was directed to be applied, which not only acts as a fomentation, but also encourages the bleeding from the leech orifices, and, in consequence of its lightness, is more easily borne by patients than one made of bread or linseed-meal, the weight of which is such as to produce great pain when the peritoneum is extensively inflamed. The internal remedies were calomel and opium simply, beginning with a large dose, and repeating the medicine in small quantities, at short intervals, until the mouth was slightly affected. After ptyalism had been induced, the bowels were relieved with castor-oil, and the patients rapidly recovered. It is hardly necessary to state, that in these cases the abdominal inflammation was of the active character, the symptoms being widely different from those which take place in that truly terrific disease "puerperal fever," as it is called.

We have had several cases of slight hemorrhage, but the discharge was speedily arrested by the application of cold and friction.

The placenta presentation was very easily managed. The female was alarmed at a sudden discharge of blood, without pain, occurring at nearly the termination of gestation. On visiting her, there was no symptom of labour present; I therefore desired her to keep the recumbent position, and ordered her a little simple medicine. On calling the next day, I was surprised to find that she had got up, and gone out. In two or three days afterwards another summons was received; the bleeding having returned, and continued for some hours. On examination, the os uteri was discovered to be considerably dilated and very soft, the vagina relaxed, but there was no regular pain. On passing the finger within the uterus, a portion of the placenta could be distinctly felt, occupying about half the circumference of the os uteri, the membranes being readily distinguished at its anterior part. The female resided at some distance from my house, and I therefore thought it safer to finish the delivery, the parts being in so very favourable a condition. On introducing my hand, the first part of the child it came in contact with was the foot, so that the extraction was accomplished without the slightest difficulty. The uterus immediately contracted, and expelled the placenta; and from that period there was no hemorrhage.

Two severe cases of convulsions have happened; and in a third there were some very threatening head symptoms, which were relieved by bleeding. In both the other cases, the convulsions continued after the delivery of the child, but were eventually cured by bleeding from the arm, followed by leeches to the temples and free purging. Both females were in labour with their first child, and the infants were born dead: one presented the breech.

In one case the forceps were required. The female was in labour with her first child, and was twenty-eight years of age. The pelvis was well formed; the child, before the dilatation of the os uteri, had fallen into the cavity of the pelvis; there was a remarkable want of irritability in the uterus, there being little efficient pain. After she had been in labour for upwards of forty-eight hours, I deemed it better to finish the delivery; for, although the pulse was remarkably tranquil, there was pressure upon the bladder, impeding its functions. The head was extracted without difficulty. The patient required the use of the catheter for two days, but there was no other unpleasant symptom. It should be stated that abdominal friction was employed, and the Secale cornutum given; but they failed to arouse the dormant energies of the uterus.

One case is now under care which I fear will terminate fatally. The patient was seized with vomiting and spitting of blood towards the end of her pregnancy, over which remedies appeared to have no control, the stomach rejecting them, as well as every kind of food. She remained in this state upwards of a week, bringing up daily large quantities of blood. On inquiry, this female informed me she had been subject to these attacks in her two preceding labours, but that the symptoms subsided after the birth of the child, and did not again recur. Under these circumstances, I thought the hastening of the labour to be the plan most likely to afford relief, and accordingly punctured the membranes. The child, which was fullgrown and healthy, was born about sixteen hours after the evacuation of the waters; but the discharge of blood still continues, though in less quantities. The stomach irritability is also unsubdued, nearly the whole of her nourishment being rejected. Her countenance is blanched, and exhibits marks of distress, but her pulse is perfectly steady and low: this latter, indeed, is the only favourable symptom about her. The medicines employed have been saline effervescing draughts, calomel and opium, small doses of the neutral salts, hydrocyanic acid; and she is now trying tinct. ferri muriat. A blister has also been applied, but at present little or no benefit has been experienced.

Bartholomew Close; July, 1833.

MEDICAL PLANTS MENTIONED BY SHAKSPEARE.

Observations upon some of the Medical Plants mentioned by Shakspeare. Communicated by SAMUEL ROOTSEY, Esq., Corresponding Member of the Medico-Botanical Society.

(Concluded.)

Heart's-ease. There is an interesting, and as I am informed an ancient custom, which has descended to the present day, now existing in some parts of Wales, that, when a lady wishes to deviate from the usual practice of waiting for certain advances to be made by the other sex, she, in a graceful and elegant manner, by presenting the gentleman with a flower of the Viola tricolor, is understood to make the first overture; and thus silently, but expressively, relief is made to supersede the anxiety of mind which is occasioned by a state of uncertainty and inquietude. Hence the name of Heart's-ease.

"Musicians, O musicians! *Heart's-ease, Heart's-ease!* Oh,
An you will have me live, play *Heart's-ease.*"—
"Why Heart's-ease?"—
"Oh, musicians, because my heart itself plays
'*My heart is full of woe!*'"—*Romeo and Juliet*, act iv. sc. 5.

The French word *pensez*, supposed to be pronounced by the flower at the moment it is presented, as if conscious of the tale it bears, is the origin of our Pansey. Nothing can be more poetical than Shakspeare's use of this all but innocent flower, in his *Midsummer Night's Dream*, from which we naturally derive another etymology, that of

"These blue-veined *violets* whereon we lean."—*Venus and Adonis.*

"I saw, but thou couldst not,
Cupid all armed: a certain aim he took
At a fair vestal, throned by the west,
And loosed his loveshaft smartly from his bow
As it should pierce a hundred thousand hearts;
But I might see young Cupid's fiery shaft
Quench'd in the chaste beams of the watery moon,
And the imperial maiden passed on,
In maiden meditation, fancy free.
Yet mark'd I where the bolt of Cupid fell;
It fell upon a little western flower,
Before milk white, now purple with Love's wound,
And maidens call it *love in idleness.*
Fetch me that flower, the herb I shew'd thee once;
The juice of it on sleeping eyelids laid,
Will make or man or woman madly dote
Upon the next live creature that it sees. * * *
And ere I take this charm off from her sight,
(As I can take it with *another herb*,)
I'll make her render up her page to me."—Act ii. sc. 2.

The medical efficacy of these plants, however, as cordials, would doubtless be lost in the form of syrup, notwithstanding its sweetness; and I have chiefly alluded to them for the purpose of inquiring what was the plant intended by Shakspeare, under the name of *Dian's bud,* to counteract the charming influence of *Love in idleness.*

> "Dian's bud o'er Cupid's flower
> Hath such force and blessed power."—Act iv. sc. 1.

Could this by possibility have been the Samolus valerandi? My curiosity once prompted me, when walking with a farmer of this neighbourhood, to ask him if he had a name for this venerated plant, and he informed me he had only once heard it called *Kenningwort* by an Englishman, in Wales, who performed remarkable cures as an oculist by its means. He said the plant received its name from its use in curing that complaint of the eye denominated "the Kenning," which is "when a substance resembling a pea forms upon the candle of that organ." Hence the Samolus, stated by Pliny to have been worshipped in this island by our ancestors, was probably this plant, and considered by them as emblematical of the efficacy of science in deterging from the intellect the foul cataracts of ignorance and error. How appropriate to the purpose of the poet! to dissipate by its agency the hallucination of love, and to dispel all overweening fondness for our most darling prejudices.

Yew. The yew seems to have taken its name from its having been employed in the construction of yokes for cattle; or perhaps, *vice versa,* the yoke, from its having been made of yew. In this latter case, the name would be derivable from the fruit, resembling in its form and in its viscous quality the yolk of an egg. Perhaps the name exists in the Greek ζυγια, our Carpinus, or true Welsh hasel, the workers of which were the original carpenters. On the Mediterranean shores, the cypress is used for coffins, because of its incorruptibility, and the tree is planted over the graves of the dead.

> "Come away, come away, Death,
> And in sad cypress let me be laid."—*Twelfth Night,* act ii. sc. iv.
>
> "Cyprus black as e'er was crow."—*Winter's Tale,* act iv. sc. 3.

Again,

> "Their sweetest shade a grove of cypress trees."
> "A cyprus, not a bosom, hides my poor heart."—*Tw. N.* sc. iii. s. 1.

The true English name for the Tamaox gallica is Cifris, evidently similar to cypress, derived from a Hebrew word for grave, which occurs in the name of a station in Arabia, mentioned in the Pentateuch, *Kibroth hataavah,* or the "glutton's graves." The word *crape* is the English radix, confounded in orthography with the tree in the above passages. In the north of Europe the yew is planted for the same reason; its boughs wave over the hearse, and its sprigs are introduced into the coffin. Shakspeare, in his *Twelfth Night*, directs the shroud to be stuck with it.

> "My shroud of white, stuck all with yew,
> Oh, prepare it."—Act i. sc, 4.

The chemical principle upon which depends the incorruptibility of this beautiful wood, and which renders the tree all but immortal, is probably the same with its poisonous quality, and which rendered it an important ingredient in the witch's cauldron:

> "Gall of goat, and slips of yew,
> Stiver'd in the moon's eclipse."—*Macbeth*, act iv. sc. 1.

I understand, in some parts of England, it is the custom as soon as a person dies, to sponge the corpse over with infusion of its fresh leaves: this preserves the body from putrefaction, and preserves it for many weeks. Professor Martyn describes the case of a young lady, who was accidentally poisoned from drinking this infusion by mistake, instead of *rue* tea, as she was advised. The result was, that although dead, she retained the bloom of her countenance, so that her attendants believed her to be only in a trance: she was accordingly kept a long while uninterred, and was finally buried without any appearance of putrefaction. The importance of this wood in ancient warfare has suggested the epithet of double-fatal, used by our author in *King Richard II.*, act iii. sc. 2.

> "The very beadsmen learn to bend their bows
> Of double-fatal yew against thy state."

Some have supposed that it was on this account so highly venerated by our ancestors, and planted by them in our churchyards; but I consider this opinion to be unfounded. Many of the yew-trees of this country are certainly 3000 years of age, and I believe that most of those in our churchyards, which are four feet thick, and some are from eight to twelve, must be older than the introduction of Christianity into this kingdom; but the demonstration and the store of facts which corroborate and prove my position, are too copious to detail in this place.

Plantage. "As true as steel as plantage to the moon." Can this be the Alisma? or is it one of the Lunarias or moonworts? I suppose it is the Alisma plantago. The dedication of this herb to the moon, or Diana, from its temperature being considered cold, and from its influence upon hydrophobic patients and lunatics, and also from its seeds being emmenagogue, leads me to conjecture that this must be the species chosen by our poet as the emblem of fidelity. The word

Plantago, Plantage, or Plantain, implying the similarity of the leaf in shape to the sole of the foot, may be more strictly applicable to the Plantago major, or the sweet-scented media; but the virtues of all are very imperfectly known to the scientific world. An individual who was bitten by a mad cat was not affected with a dread of water till the lapse of a long period of time, but she experienced a recurrence of pain and irritation *at every change of the moon,* and she was finally attacked by death, after the regular intermission of a month. I am therefore of opinion that Shakspeare was acquainted with the fact that hydrophobia is relieved by the Alisma. It might be advantageous to our excellent Society, if its learned members were to institute inquiries amongst the poor people of the country, relative to the properties of this and such like plants, and not reject hastily and with disdain the important knowledge to be sometimes derived from their experience. It was by such inquiries that my late immortal friend made the discovery of vaccination, which, by philosophical reasoning and induction, he rendered more and more certain as a preventive of one of the most distressing " ills that flesh is heir to." The more common use of ordinary plantain as an application to wounds is likewise noticed by Shakspeare.

" *Benvolio.* Take thou some new infection to thy eye,
And the rank poison of the old will die.
Romeo. Your plantain leaf is excellent for that.
Benvolio. For what, I pray you?
Romeo. For your broken shin."—*Romeo and Juliet,* act i. sc. 2.

I cannot refrain from mentioning here two instances of the use of medico-botanical knowledge. The first is the case of an acquaintance of mine who has long been a cunning workman in British fancy woods: he walks rather lame, but occasionally goes a considerable distance. He broke his leg, and was confined to his chamber for four years. He informs me that the faculty considered his case as desperate, after trying all their skill without effect. He was recommended to a certain plant, which he was directed to apply externally as a poultice. This succeeded; it brought away splinters of bones, &c., and effected so complete a cure, that in a few weeks he was enabled to walk and enjoy exercise in the open air as before. It is curious that he defied me as a professor of botany to mention the name of the plant which had afforded him relief; he kept it secret, and assured me he had operated in the same successful manner upon four other persons discharged as incurable from our infirmary. In his chuckling he said that nobody had ever guessed at the remedy but a Frenchman, who declared that the peasants of that country were well acquainted with its merits. He was perfectly astonished when I told him it could be no other than Comfrey, and he immediately waved his hat in triumph, shouting "Comfrey for ever!"

The second was the daughter of a most respectable bookseller, who was confined with a slight sprain in her ancle, from dancing. The medical gentlemen were of great eminence who attended her; the injury became worse and worse; and, after a confinement to her bed of, I believe, eleven months, her life was almost despaired of, when permission was obtained to apply, at the suggestion of a poor individual, the simple leaf of a garden-herb, which was considered as likely to be of service. The leaf was applied, and from that moment the pain diminished. In a few days the leg was healed up, and the young lady completely restored to her health. A small specimen of the plant was carefully cultivated in a flowerpot, and when I was applied to for its name, I recognised the Valeriana Phu. In this manner I think it advisable to make inquiries, if opportunities should occur, respecting the Lunarias, or moonworts, and the Alyssums of Dioscorides, Pliny, Galen, and Tabermemontanus; comparing them with the criticisms of botanists, and the experience of country people. I have no doubt that much information would be obtained confirmative of the interesting anecdote related by your lordship.

The Mercurialis perennis, or Cynocrambi, called Dog's mercury, as is reported, from its virtue having been discovered by Hermes, is the plant used in Spain for curing hydrophobia. It is here called Bristol-weed, and, from its appearing to contain a blue dyeing and cathartic principle, similar in all probability to that of oleander and indigo, I suspect it to be the Glastum, or woad, of our ancestors. Glas is the Welsh word for what is blue and transparent; it occurs seemingly in the word Ganderglasses, or Gandergaws; our name for orchis, the first part of the word *Gander*, being merely the Greek ἀνῆρ, and the Latin *anser*, meaning male, and therefore applicable to the O. mascula and O. morio, the flowers of which in pastures appear like gems, constituting a *gaudy* and brilliant enamel, one of the most beautiful in nature.

The plant Horehound is likewise a remedy for hydrophobia, and takes its name accordingly; the first syllable of the word being the Greek ωρεω, *curo;* and Diascorides attests its efficacy. The true horehound is therefore the Marrubium Alyssum, or the Alyssum of Galen.

We may likewise inquire relative to the Dog-violet, whether the Viola canina may not possess this faculty, or the Dentaria, called toothed-violets, and sometimes dog's-tooth violets, or the Erythronium dens canis; called also in Hampshire, where it is abundantly wild, the dog's or hound's tooth violet.

The name of hound's-tree, or hound's or dog's berry, given to the Cornus, would authorize a trial of this fruit likewise in this horrible complaint.

Whether the word Madnep indicate another cure may be inquired, and whether the name apply to Heracleum Sphondylium, Heracleum Panaces, Partinaca Opopanax, or the Angelica Archangelica?

But, if we are to believe Pliny, we are indebted to the oracle for the discovery that the root of Cynosbatos, or Cynorrhodon, Rosa canina, or dog-rose, is a remedy for hydrophobia. It will appear, from the following extracts, that our medical roses were all known to Shakspeare, and celebrated by him, although not indeed for their therapeutic efficacy.

Notwithstanding the best conserve is made from the fruit of the Rosa arvensis, or apple-rose, yet we must suppose that our poet, by scarlet hips, referred to the fruit of the common briar. "The oaks bear mast, the briers scarlet hips." *Timon*, act iv. sc. 3.

The R. damascena is used for syrups, and the variety γ of Martyn must be the true damask-rose, so elegantly and poetically referred to in the following passages:

> "Fair ladies mask'd are roses in the bud;
> Dismask'd, their damask sweet commixture shews,
> Are angels veiling clouds, or roses blown."—*Love's L. L.* a. v. s. 2.
>
> "There was a pretty redness in his lip,
> A little riper and more lusty red
> Than that mixed in his cheek: 'twas just the difference
> Betwixt the constant red and the mingled damask."—
> *As You Like It*, act iii. sc. 5.
>
> "I have seen roses damasked red and white,
> But no such roses see I in her cheek."—*Sonnet* 130.
>
> "Gloves as sweet as damask-roses."—*Winter's Tale*, act iv. sc. 3.

He also contrasts the *red* with the *white* rose, both of which contain the same medical astringent property. The white rose being rubbed on alkaline paper, instantaneously produces a very beautiful yellow colour, which may be used as a dye.

CRITICAL ANALYSES.

Quæ laudanda forent, et quæ culpanda, vicissim,
Illa prius, cretâ; mox hæc, carbone, notemus.—Persius.

Asthma. [Dr. Copland's *Dictionary of Practical Medicine.*]

Dr. Copland has given, in the space of a few pages, so much valuable information upon the subject of asthma, that we feel persuaded we cannot select a more profitable topic for the notice of our practical readers. He defines asthma to consist in great difficulty of breathing, recurring in paroxysms, accompanied with a wheezing sound, sense of constriction in the thorax, anxiety, and a difficult cough, terminating in mucous expectoration. There are few diseases the nature of which has been a subject of greater doubt and difference of opinion than asthma. In proof of this diversity of opinion, Dr. C. remarks that, until the writings of Floyer, Willis, Hoffmann, Alberti, and Juncker, directed particular attention to its pathology, it was generally confounded with dyspnœa, being usually denominated intermittent or remittent dyspnœa. By these writers, and more recently by Sauvages, Cullen, Pinel, and Georget, asthma was considered as essentially nervous in its nature; and the lesions found upon the dissection of fatal cases viewed as its consequences, and not as its causes. More recently, and even at the present day, among many, it has been considered as a symptom of organic change of either the heart, large blood-vessels, or of the lungs, air-tubes, &c. But this doctrine, in Dr. C.'s opinion, although generally accurate in respect of dyspnœa, is quite erroneous as applied to asthma.

"*Pathology of Asthma.* The dependence of dyspnœa, not only upon organic lesions of the organs seated within the chest, but upon the form of the thorax, upon diseases of adjoining viscera, and upon the state of the air-passages, is sufficiently obvious. The difficulty of breathing proceeding from these sources may be either continued or remittent; but it never is, whilst the causes on which it depends are in existence, characterized by intervals of perfect ease. True asthma, however, presents intervals of healthy respiration; and, although repeated returns of the attack will generally induce some change in the organization of either the lungs or the principal organs of circulation, yet this is not uniformly the case; and moreover, an attentive examination of the thoracic viscera, in recent attacks, fails of detecting in them any appreciable change, particularly during the intervals between the paroxysms. The disease has even proved rapidly fatal during the attack, and yet no alteration adequate to account for the symptoms could be detected on dissection. Instances of this description have been adduced by Wichmann, (*Hufeland's Journ.* b. i. p. 18,) Parry, Georget, Andral, Laennec, and Guersent, and justify the opinions of those who have referred the disease chiefly to the nervous system. In some cases, after repeated returns of the attack, and when they have induced organic change, the intervals are less distinctly marked, consist of remissions merely, and the disease may at last pass into confirmed dyspnœa.

" *The structure of the air-passages and bronchi* evidently shews that these parts are susceptible of preternatural or spasmodic constriction. During 1821 and 1822, when engaged in some researches into the pathology of diseases affecting the trachea and bronchi, I was enabled distinctly to trace muscular fibres throughout those parts, both in man and in the lower animals. The disposition of those fibres in many of the lower animals, and the mode of their connexion with the cartilaginous rings, are peculiar, and beautifully adapted to guard against the contingencies to which they are liable from varying positions and habits of life. Upon those, however, I cannot here enter. About the same time that my attention was directed to this subject, (*London Med. Repository*, vol. xxii. p. 418,) the researches of Reisseissen, of Berlin, and of Laennec and Cruveilhier, of Paris, appeared; and the results, in respect of the structure of the bronchi and larger ramifications of the trachea, upon the whole, agree with what I have observed. It had been denied that the membraneous or any other part of the air-passages contain muscular fibres. But this was asserted chiefly by those who cannot believe that a part is muscular, unless the fibres are the same in appearance as those which enter into the composition of the muscles of voluntary motion. Other anatomists, who take a more comprehensive view of the conformation and functions of the muscular system, consider, with greater justice, that the muscles which are acted upon by the will form an order by themselves; and that there is another, and a very important order of muscular parts, which are not directly influenced by volition, but which contract, from stimuli acting on them, either immediately or mediately, and which present certain peculiarities in respect of the appearances of their fibres, of the mode of their distribution, and of the manner of their connexion with internal tissues and organs. Now the fibres which are discovered in the trachea, and traced to the smaller ramifications of the bronchi, are in every respect similar to other involuntary muscular fibres in their organization; in their connexion with a mucous surface, forming, in many respects, a tunic concentrically with the mucous coat; in being disposed in circular fibres, surrounding hollow tubes; and in being supplied entirely by ganglial or involuntary nerves. The disposition of the fibres therefore which are detected in the air-passages being altogether similar to that which obtains in other canals, the muscular structure of which is not disputed, as in the alimentary tube and urinary bladder; the organization of the fibres being also similar: their connexion to a mucous surface, and the circumstance of their being supplied with the same order of nerves, being at the same time considered: are we therefore to be surprised that agents affecting either the mucous surfaces thus related to them, or the nerves supplying them, should be followed with analogous effects to those which we observe after the action of agents directed to the mucous surface or nerves of the alimentary canal?

"*The lungs possess a vital power of expansion.* The structure of the air-passages, then, would lead us, independently of the results of observation, to infer that the circular fibres are liable to experience, with all other involuntary muscular fibres, a spasmodic constriction; and it evinces, particularly in the conformation of the cartilaginous rings with which the trachea and larger ramifications of the bronchi are provided, a marked provision against an inordinate continuance or degree of this constriction; the rings, by their permanent elasticity, acting as antagonists to the circular fibres, preventing extreme constriction, and at last overcoming long-continued spasm, particularly in those larger branches, the inordinate constriction of which might have the effect of excluding the air from a very large portion of the lungs. In the larger ramifications of the bronchi, the muscular fibres connecting the extremities of the cartilaginous rings are thus antagonised by these rings; but, in the smaller ramifications, where the rings cease to be detected even in the imperfect forms in which they there exist, and where the fibres are perfectly circular, the only provision which can prevent an inordinate constriction of those fibres is in the structure of the lungs themselves, which must necessarily undergo a change in bulk, and become more condensed by this constriction, in those parts, at least, to which the spasm extends; unless we believe that the lungs, like various other organs, are endowed with an expansive power, a power which physiologists and pathologists have too much overlooked in their exposition of the healthy and morbid actions of the animal economy.*

"The mechanism of the expansive power is so little understood, and generally so insufficient for the explanation of this phenomenon, that we must refer chiefly to the vital actions of the part, which must necessarily depend on the energies of the body generally. The expansile action of the penis, nipple, heart, uterus, &c. cannot be explained by their organization only: it is manifested to us only during life, and the perfection as well as imperfection of this action are always accordant with the degree of vital energy with which these organs are endowed.

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* "That the lungs, however, really possess this property, may be inferred from the permanent elasticity of their structure, which continues for some time after death; and which is still more marked during life, as shewn by exposing the lungs of a living animal. This state may be with propriety called the vital expansibility of the lungs, inasmuch as the degree of this state is chiefly dependent upon the vital energy of the system, and partly on the peculiar organisation of the lungs themselves."

"I have long since had occasion to remark that the motions and functions of the lungs (*Physiological Notes, &c. to* M. Richerand's *Physiology,* 2d edit. p. 628,) have been too generally and exclusively referred to the mechanism of the respiratory organs, and to chemical changes produced in the lungs, to the neglect of a much higher influence, always controlling, modifying, or altogether changing, the subordinate powers to which their functions have been thus referred. That the vital energies of the frame are most powerfully exerted in the lungs, through the medium especially of the organic nerves with which they are provided, must be evident to all who will contemplate the nature and extent of the changes constantly taking place in these organs upon the blood circulating through them; and the relation which subsists between their functions and the vital energies of the system generally. Now it does appear to me that there exists a vital expansion of the lungs, independent of that which they experience from atmospheric pressure, and from following the dilated parietes of the thorax during inspiration. In experiments upon living animals, where the walls of the chest have been opened, the lungs are observed to swell and contract alternately. This fact, which was first insisted upon by M. Roux, (*Mélanges de Chirurg.* p. 87,) has since been duly appreciated by Prus, Laennec, and a few others. Even in cases where the portion of lung has protruded itself after a wound of the chest, (a circumstance which could only occur from active expansion of the lung itself,) this portion has been, although thus unnaturally placed and subjected to the pressure of the atmosphere, observed to dilate during inspiration. The not infrequent occurrence of ossification of the cartilages of the ribs in old persons, and consequent perfect immobility of the ribs, even without any evident dyspnœa, furnishes another proof of the inherent expansibility of the lungs; for, without having recourse to this vital property, we cannot explain the performance of the actions of inspiration and expiration by the diaphragm alone.

"This vital property therefore, with which the lungs, in common with some other organs, seem to be endowed, together with the disposition and elasticity of the cartilaginous rings of the bronchi, furnishes an antagonising force to the unnatural constriction of the tubes, from spasm of their circular fibres; and, while it serves to explain the natural functions of the organ, with their modifications from the various influences to which this property is subjected, is one of the sources to which we are to impute some of the diseases, and more especially the one under consideration, to which the lungs are liable." (P. 135.)

Having thus shewn, from the structure of the air-passages, that they, in common with all other hollow tubes of the body, admit of spasmodic constriction, and that they also present a provision against the undue extent or continuance of this state, Dr. C. further remarks, that a close observation of the manner of performing respiration is sufficient to convince us that they frequently experience this state, owing to the operation of certain causes acting either directly on the mucous surface of the tubes, and impressing the nerves terminating in it, or originating in, and irritating the nerves themselves, either at their origins, or in their ramifications and connexions.

Symptoms and history of Asthma. The premonitory symptoms of this disease are langour, sickness, flatulency, and other dyspeptic disorders; heaviness over the eyes, and headach; uneasiness and anxiety about the præcordia, with a sense of fulness and straitness in this region and in the epigastrium. In some cases pain is complained of in the neck, with uncommon drowsiness and stupor. Costiveness is often a precursory symptom.

"The *invasion* of the attack of *spasmodic asthma* is generally soon after midnight, or about one or two in the morning, and during the first sleep. The patient wakes suddenly from a sense of suffocation. He feels a most distressing tightness at his chest, with great anxiety, difficulty of breathing, and impediment to the free admission of air into the lungs. He assumes with eagerness the erect posture, and cannot bear the least incumbrance about the chest. The breathing is wheezing, interrupted, and laborious. The shoulders are raised, the elbows directed backwards, and every effort made to enlarge the thorax. Owing to the interrupted circulation through the lungs and heart, the countenance, which was at first pale and anxious, becomes, particularly in plethoric habits, red or bloated, and covered with perspiration. The eyes are prominent, and the conjunctiva injected. A considerable quantity of pale urine is usually passed at the commencement, or previous to the accession, of the paroxysm; and the lower extremities are usually cold. The pulse is generally accelerated, weak, irregular, and often intermittent. During the fit, the patient has commonly an instinctive desire for cool fresh air, which always revives him. A small or close room is offensive, and all warm substances given internally increase the flatulency of the stomach and bowels, and aggravate the symptoms. When the fit has continued from half an hour to one, two, three, or even four hours, it leaves the patient; and his respiration, pulse, and feelings assume their natural state.

"This is the common course of a first and moderate attack of the disorder. Sometimes the patient has but one such fit; but more generally a slight constriction of the chest is felt through all the succeeding day, and the paroxysm returns at the usual period of the night; and this continues for three, four, or even seven days; when the patient is at last altogether relieved from the attack. The disease may be suspended for a month, or several months; but it is liable to recur from changes of air, errors of diet, and from the operation of the other causes productive of it.

"In some cases the attack is more severe from the commencement, and continues, with slight remissions, for several days, accompanied by a harsh suffocative cough, great distention of the abdomen from flatus, and more or less of the symptoms which characterise the complaint in the severer states resulting from repeated attacks.

"When asthma once seizes on the system, it seldom fails of recurring, though the intervals between the paroxysms are of very uncertain duration. In many cases it recurs periodically every ten days or a fortnight. Sometimes the attack returns at the full and change of the moon, or at one of those periods only. It has been observed to recur in females just after the menstrual discharge, or to precede this evacuation. Persons who have become subject to the disease seldom escape an attack in the spring and autumn.

"After repeated seizures, the disease often assumes the most violent and distressing features; the difficulty of breathing in the fit amounts to the utmost degree, and is attended with the greatest tightness over the whole chest, the patient feeling as if he were bound with cords. His anxiety at this period is inexpressible, and he labours in respiration as if every moment would be his last. Severe vomiting also frequently occurs. The matter discharged is slimy and frothy, or of a greenish yellow colour. He is subject to palpitations and faintness; and cool fresh air becomes absolutely necessary. About this period a loose stool sometimes takes place. The eyes are prominent, the face sometimes pale, sometimes high-coloured, bloated, or livid: the nose and ears are cold; the face, neck, and chest, covered with perspiration. The pulse is generally extremely weak, irregular, and even intermitting; there is often much difficulty of swallowing. The patient can scarcely speak, cough, or expectorate, and the stomach and bowels are much distended with flatus. As the paroxysm abates, the cough becomes freer, and is attended with the expectoration of a little viscid mucus; and, in proportion as the cough and expectoration increase, the distressing symptoms abate; this evacuation, which had been retained by the spasm of the air-vessels, indicating a solution of the spasm and a freer access of air to the cells of the lungs. An easy and free expectoration, particularly if it be accompanied with softness and moisture of the skin, and a sediment in the urine, is a certain indication of the subsidence of the attack. Sometimes, when the paroxysm is unusually long, the patient experiences only a single occurrence of it during the attack." (P. 137.)

The *humoral* form of asthma is generally gradual in its accession, and attended by extreme oppression, or suffocative cough, and a copious secretion and expectoration of mucus from the commencement of the seizure. It is sometimes the consequence of repeated attacks of the preceding variety; and is generally more severe and of longer duration than it, owing to the accumulation of viscid mucus in the air-vessels conspiring with the spasm it occasions to aggravate the symptoms. There are also less perfect intervals of ease in this form of the malady than in the spasmodic. After the subsidence of the patient's sufferings during the first night of the attack, and while the expectoration is easy and copious, the lungs still continue irritable throughout the day, and the respiratory function embarrassed from the slightest causes. At the approach of night, the fit re-commences with the usual symptoms, and the night is passed nearly as the former. On the third day the remission is more complete; there is some additional expectoration, and bodily motion is performed with less distress, but still with great inconvenience. After the paroxysm has been renewed in this manner for three or four nights, or for a longer period, sometimes for several days, or even weeks, the expectoration and cough are more easy and free, the daily remissions become more perfect, and the strength of pulse and vigour of action increase.

"When the chest is examined by the ear or stethoscope, the sound of respiration is weaker during the fits than in the intervals, but it is seldom altogether suspended in certain points of the chest; it is attended by a sonorous rattle, flat or sibilous, imitating the chirping of birds, the note of a violoncello, or the cooing of the wood-pigeon. With this there is frequently intermixed a mucous rattle; but this conveys the impression of being produced by a thinner fluid than the mucus of common catarrh. In the intervals of the attacks, these various species of rattle exist, but in a much less degree. The respiratory sound is louder than during the paroxysms: sometimes it is almost puerile. If the complaint have occasioned dilatation of the bronchi, the respiration assumes more or less the character of the variety called bronchial; in all cases it varies in intensity at different points of the chest, and these points change their situations from day to day (LAENNEC.) The chest generally sounds well, throughout the attack, upon percussion." (P. 137.)

The humoral form of asthma is often consequent upon repeated attacks of the spasmodic, but the latter may also occur after the former; or the attacks in some persons present an evident complication of both forms of the disease. Disorders of the stomach and bowels are common in asthmatic patients. In females, menstruation is generally irregular, and an attack often precedes the period of the menstrual discharge. An attack of asthma terminates either by a return to the healthy functions, or by inducing further lesion, in which it either disappears or becomes complicated; and in death. On each of these terminations Dr. Copland offers some excellent practical comments.

"Although the paroxysms of asthma frequently terminate in a return to the healthy functions, a perfect immunity from future attacks can rarely be procured. Yet these attacks may be frequent, severe, and of long duration, recurring for a long series of years; the patient, notwithstanding, arriving at a very advanced age, before a fatal issue takes place. But they often produce the following organic lesions.

"The most common consequences of the disease to which I may now advert, are, chronic inflammation and dilatation of the bronchi, the different forms of emphysema and œdema; of the lungs; hæmoptysis; tubercular formations, with which asthma may also be associated from its commencement; enlargement, and dilatation, &c. of the cavities of the heart; effusions of fluid in the pleura or pericardium; and wasting of the heart, or polypous concretions, within its cavities. As the reader will find all those lesions treated of under their distinctive heads, I shall here only remark respecting them, that, when they supervene to asthma, many of the distinctive characters of this disorder entirely disappear in those of the superinduced disease, and the lesions of the respiratory functions assume the distinctive features of chronic, continued, or remittent dyspnœa. Severe attacks of asthma may also terminate in congestions or effusions within the head, giving rise either to epilepsy, coma, or apoplexy.

"It was already remarked that auscultation and percussion furnished merely negative information in the different forms of asthma. But this information is still important, inasmuch as it intimates the non-existence of any of the foregoing organic changes; and, when they do exist, those means of diagnosis enable us not only to recognize them, but also to ascertain with precision their nature, progress, and extent, and thus to form an accurate diagnosis and prognosis in respect both of the primary disease and of the consecutive organic changes.

"When the disease ends in death, this event is brought about generally by superinducing some one of those changes already referred to as terminations of the disease, or of those lesions with which it is frequently associated. Death may however occur, but much more rarely, from the severity of the attack; the requisite changes not being effected on the blood by respiration, owing to the obstructed state of the air-vessels, either from spasm or the accumulation of viscid mucus, or from both, whereby the nervous centres are supplied with blood unsuitable to their functions, and the heart ceases to contract with sufficient energy to preserve the circulation in a requisite state of activity through the lungs and brain.

"*The appearances after death* may be inferred from what has already been stated. These appearances are rather the consequences of the disease, than the disease itself; for it is seldom that we have an opportunity of examining the body in recent and uncomplicated cases of asthma. Where however this has been done, the lesions, even when they have been detected, have been insufficient to account for the disease. Willis records a case of protracted asthma, in which no morbid appearances could be detected; and similar cases have occurred to Laennec, Andral, Cruveilhier, Bouillaud, Joly, and others. Ferrus, after extensive experience, states that he has been unable to detect any lesions which can be attributed to uncomplicated asthma. The changes which have been noticed therefore by authors are to be viewed chiefly as accidental occurrences, or associated maladies, and perhaps more frequently as the remote results of repeated or protracted attacks. The appearances usually observed in fatal cases are the same as have been described." (P. 138.)

Varieties of Asthma, and of their Pathology. By some pathologists this disease has been divided into many forms, several of which must be regarded as more fanciful than practically applicable. Dr. Copland admits only the idiopathic and symptomatic forms; and he divides the former into the nervous, the primarily spasmodic, and the pituitous or humid asthma.

Nervous asthma was first accurately described by Laennec, who pointed out the difference between it and the forms depending on spasm of the air-tubes. It is characterized by anhelation, from a feeling of want of a more complete respiration than the patient enjoys, the pulmonary expansion distinctly taking place with promptitude, completeness, and uniformity, so as to furnish a general puerile sound on auscultation, usually accompanied with a slight cough, and with a free mucous expectoration. In this variety no spasm seems to exist in the smaller air-vessels; for the whole tissue of the lungs is dilated to its full capacity, and with unusual promptitude and completeness, so that the puerile respiration is heard in every part of the chest; whereas, in the other varieties, the respiration is generally somewhat more indistinct than in health. The pulmonary expansion evidently takes place completely and rapidly in all the air-cells, and yet the patient feels the want of a more extensive respiration than he enjoys; and the lungs, though dilated to their utmost, have not capacity enough to satisfy the wants of the system. This affection is common in persons affected with chronic mucous catarrhs, attended by a copious and easy expectoration; but even in them, during the severest attacks, the completeness with which respiration is performed is quite astonishing.

"In this form of the disease it is not in the small air-tubes that we are to look for its proximate cause, but in the trachea and large bronchial trunks, and particularly in the nervous influence itself; and this will equally hold good even if we adopt the chemical theory of respiration, and refer the affection to an extraordinary want of oxygen in the blood, arising from impeded function of the respiratory mucous surface, owing to the mucous secretion covering it. M. Laennec believes, as this species occurs only in persons affected with chronic mucous catarrh, that it can never amount to asthma without the catarrhal complication. Adults and old persons, he remarks, who have puerile respiration without catarrh, are not, properly speaking, asthmatic, but they are short-breathed; and dyspnœa is induced by the slightest exertion, though, when sitting still, they frequently experience no oppression whatever.

"This variety may be considered as depending upon a temporary augmentation of the want of the system for respiration, occasioned most probably by some unknown modification of the nervous influence; and apparently consisting in an expansile action of the lungs increased much beyond the healthy standard. But here a question suggests itself, viz. can this augmented action of the lungs be owing solely to the state of this organ, or is it associated with, or partly depending upon, increased activity of the respiratory muscles, particularly the diaphragm? M. Laennec states that it cannot be produced at will by a full inspiration; and therefore infers that this state of the lungs is a primary condition of them, and not depending on increased respiratory efforts.

"From this consideration I am led to infer that, although the vital expansile action of the lungs may be increased in this variety of asthma, it is accompanied with, and much assisted by, augmented activity of the diaphragm, which performs its office more promptly and completely in this variety of asthma than in any other; that, instead of the disease being characterised by spasm of the smaller ramifications of the bronchi and air-cells, as in the second variety of asthma, the air penetrates more fully into them than usual; and that, if any spasm exists, it is limited to the trachea and large bronchial tubes; the exalted state of expansion of the lungs, and of function of the diaphragm, being an effort to counteract this morbid condition of the large tubes, and to supply the wants of the system by a more forcible inspiration, the increased rapidity with which the air is thereby made to pass through the strictured canal making more than amends for the diminished caliber of the passage. This form of the disease is frequently *symptomatic* of nervous affections, particularly of hysteria, when the globus hystericus affects the state of the trachea, and of various diseases, in which the blood is imperfectly changed in its circulation through the lungs. But when thus symptomatic, it is often slight and evanescent." (P. 139.)

Spasmodic Asthma. In this variety the paroxysms are sudden, violent, and of short duration, and attended with hard spasmodic constriction in the chest; slight, dry, and difficult cough, and with a scanty expectoration, occurring only towards their close. Here the ramifications of the air-tubes, and perhaps the air-cells themselves, seem to be unnaturally constricted. By auscultation it may be ascertained that there is an imperfect entrance of air into the air-cells.

The paroxysms of this form may be short; but the disease may continue for a long time, and to a certain extent become habitual. Sometimes, in consequence of the violence of the spasmodic struggle, rupture of one or more of the air-vessels or cells takes place, from the violent action of the inspiratory muscles on the one hand, and the unyielding state of constriction of the air-vessels on the other; and emphysema of the lungs is superinduced, forming one of the most common lesions found upon dissection of fatal cases, and, in the opinion of some pathologists, the proximate cause of the disease.

The *common*, or *humid asthma*, is marked by a gradual accession of the paroxysms, which increase in severity, are protracted, and attended with heavy and laborious constriction of the thorax, severe suffocative cough, and with expectoration, often commencing early, at first viscid and scanty, but becoming copious, and affording relief.

"The chief characteristic of this variety of asthma is the copious discharge of viscid mucus accompanying it. But the questions with several modern pathologists have been, whether the phenomena of the disease are to be imputed solely to the accumulation of this fluid in the air-passages, or in part only; and whether spasm of those passages also exist in conjunction with an increased secretion of mucus, or not. I believe that an attentive observation of the phenomena of the disease, with the assistance of auscultation and percussion, (which, however, occasionally furnish but little information, and that of a negative description, in this disease,) will lead to the inference that it depends upon both those morbid states. The limits of our inquiry are too narrowed to the question of the priority of their existence, and the relation which the one holds to the other. As to these points, it may be remarked, that the early occurrence of expectoration, as well as its abundance, forbid the inference that the production of viscid mucus is the consequence of relaxation of the spasm; whilst they favour the idea that the spasm is occasioned by this secretion in the irritable and morbid air-tubes; the severity and duration of the paroxysms being occasioned by these double states of disease,—an abundant secretion of viscid mucus in, and a spastic constriction of, the air-passages.

"But it may be further inquired, are not those morbid changes the effect merely of a certain condition of the air-passages, still more intimately connected with the disease than they are? I do not deny the possibility of lesions antecedent to those now specified; but the difficulty of ascertaining their exact nature must be conceded. It would certainly be advantageous to obtain this information, inasmuch as on it would be based the means of cure which might be employed early in the disease. That it is not inflammation is proved by concomitant and symptomatic phenomena, by the course of the paroxysms and of the disease, by the terminations usually characterizing it, and by observation of the juvantia and lædantia during its progress. It seems, however, extremely probable that the morbidly increased secretion and spasm are preceded by a congestive state of the mucous respiratory surface; this state disposing to the spasm, and being, as well as the spasm itself, at last relieved by the copious effusion of mucus; the mucus first effused tending however for a time to increase the spastic constriction of the air-passages, and the consequent struggle of the respiratory muscles to overcome it, and to procure a fresh supply of air in the lungs. This antecedent state of vascular turgescence of the mucous surface of the bronchi in asthma, is perhaps most marked in that form of this variety in which little or no expectoration accompanies the cough, at least, early in the attack; and which, from this circumstance, and the causes which induce it, has been called the *dry* catarrhal asthma.

"If it be still further asked, to what cause are we to impute this congestive state of the respiratory surfaces? I can only answer, to a certain primary change of the vital energy of the organic nerves supplying the blood-vessels, and actuating the muscular fibres of the bronchi; and hence, as the morbid changes of the circulation, secretion, and caliber of the air-passages, are merely effects of one cause —of a previous change of the vital manifestations of the nerves of the organ, it becomes of the utmost importance to ascertain the nature of this primary change with as much accuracy as possible, in order that remedial agents may be directed with precision to its removal; but the prosecution of this very interesting topic falls under another division of my subject. In estimating, however, the nature of this, as well as the other varieties of asthma, the difficulties opposed to expiration by the spasm of the air-tubes, and the accumulation of viscid mucus in them, have been too generally overlooked, in our eagerness to ascribe all the morbid phenomena to impeded inspiration. But I believe that the disease, particularly this variety of it, is as much occasioned by the obstacle these states of the air-passages present to free expiration; the air, by the greater power of the inspiratory over the expiratory muscles, being drawn in sufficient abundance into the lungs, from which it is imperfectly expelled. From this circumstance the lungs are often kept in a state of inordinate dilatation, and the respiratory muscles excited to convulsive actions, occasioning dilatation or rupture of the air-cells, and consequent emphysema of the lungs. In the more advanced stages of the disease, in old and debilitated subjects, this struggle to dilate the thorax still further, proceeding from the wants of the system for respiration, and to expel the air from the lungs through the obstacles placed in its way, generally terminates unfavorably to the latter part of the respiratory actions; consequently, expectoration is impeded or suppressed, and life is terminated, with the air tubes and cells, and even the substance of the lungs loaded and infiltrated with mucus, air, and serum. It is in this state that active stimulants and emetics, by rousing the energies of the frame, and by exciting the expiratory efforts during the process of vomiting, prove so frequently beneficial.

"This form of asthma may be partial, affecting one lung only, or one more than another; but it is more commonly general; and in some constitutions, particularly in aged persons, and when it has supervened to repeated attacks of catarrh, the quantity of viscid mucus expectorated is very great.

"Its *anatomical characters* are, slight swelling, or thickening, and softening of the mucous membrane, with a slight appearance of redness in parts, and with marked congestion, and purplish tint of portions of this surface, in the more severe or protracted cases. Sometimes these lesions are accompanied with slight œdema of the membrane, and the development of miliary tubercles in the lungs.

"As the majority of cases of this disease is characterized from the commencement by copious expectoration, it becomes a question how far it deserves to be considered as a variety of asthma; but, taking all its phenomena into consideration, particularly the spasm of the air-passages, and convulsive action of the respiratory muscles, as well as the circumstance of it having been usually considered as a species of asthma, and the difficulty of arranging it otherwise, I was unwilling either to assign it a different place, or to make it a distinct disease, to which it scarcely can lay claim. M. Laennec has placed it among catarrhal inflammatory affections of the bronchi: but I conceive that it is seldom inflammatory, either in its origin or progress; and that, although occasionally commencing in, and always aggravated by catarrh, it is not necessarily a catarrhal disease. Besides, inflammations of the bronchi and catarrhs are not identical affections, although the latter frequently pass into the former.

"But, besides these considerations, many of the phenomena essentially characteristic of asthma always attend it, to a greater or less extent. Upon an attentive examination, however, of the chest of a person afflicted with this affection, by auscultation and percussion, these phenomena are found to vary, in different cases, or even in the same case, at different periods of the attack; yet they are essentially the same as those which mark the preceding varieties, although not so evident to the senses as in them, inasmuch as they are obscured by a more prominent symptom,—the copious mucous secretion and expectoration. Sometimes it is manifest that certain parts of the air-tubes are differently, or even oppositely, affected at different periods of the attack. When the viscid mucous secretion proceeds from, and is still present in, the smaller ramifications of the air-vessels, this condition, together with some degree of spastic constriction of their circular fibres, either in a part only, or more or less throughout the organ, occasion many of the symptoms which characterize the second, or spasmodic variety of the disease. But, in proportion as the secretion rises to the larger air-tubes, and leaves the smaller ramifications clear; or when the mucous secretion proceeds chiefly from the former parts, and excites, or is accompanied with, spasms of these canals, but not to the extent of preventing the passage of air into the parts of the lungs which they supply; these parts generally expand freely, owing to the vital activity of the organ, the wants of the system for the changes effected on the blood by respiration, and the active contraction of the inspiratory muscles during the convulsive efforts of the paroxysm. Hence the part of the lungs thus affected generally furnish the puerile respiration, and a clear sound on percussion, with a full and prompt performance of the inspiratory actions; phenomena characteristic of the first, or nervous form of asthma." (P. 141.)

Symptomatic asthma may arise from various organic lesions of the thoracic and abdominal viscera; and sometimes it is the consequence of lesions affecting the medulla oblongata and spinal cord, of hypochondriasis, and diseases of the colon and rectum.

" Upon taking a review of the causes of this malady, we shall perceive that it may be occasioned, like several other chronic diseases of the respiratory organs, 1st, by whatever lowers the vital energies of the frame, particularly as they are manifested in the lungs, and increases the susceptibility of the organ to the impression of external agents, or to internal morbid associations; 2d, by mental or moral states deranging the nervous influence, actuating the respiratory and circulating organs; 3d, by agents which disturb the equilibrium existing between the cutaneous and respiratory functions; 4th, by causes acting, during respiration, directly on the seat of disease, either by depressing the vital and nervous influence of the organ, or by irritating its mucous surface, and thereby exciting its fibrous structure to undue contraction; 5th, by causes acting during respiration, especially aërial vicissitudes and states which modify or impede the respiratory functions, and favour congestion of the pulmonary mucous surface, or of the substance of the lungs; 6th, by whatever impedes the action of the respiratory muscles, or embarrasses the motions of the parietes of the chest; 7th, by lesions of the circulating organs deranging the circulatory function of the lungs or heart; 8th, by the extension of irritation from adjoining viscera or parts; 9th, by the destruction of the equilibrium between absorption and excretion; 10th, by the transference of morbid action from other parts of the frame; 11th, by affections of the respiratory nerves and plexuses, either at their origins or in any part of their distributions. Hence the propriety of dividing asthma not only into the *nervous*, *spasmodic*, and *humid* varieties, but also into two divisions, as respects its relations to its causes, and to other diseases, viz. into *idiopathic* and *symptomatic*." (P. 146.)

Proximate cause. Most writers have referred it to spasm of the bronchial tubes. By some pathologists the disease is regarded as altogether symptomatic of organic changes seated chiefly in the heart and large vessels; but, admitting that this is occasionally the case, Dr. Copland conceives that they substitute the effect for the cause; and his opinion is not only corroborated, but confirmed, by many post-mortem examinations, in which no such changes were found. He concludes that asthma depends on a preternatural or spasmodic constriction of the air-passages, accompanied, in many cases, especially the humoral or catarrhal variety, with turgescence of the vessels of the lungs, particularly those supplying their mucous surface, and an increased secretion of mucus.

Treatment. The physician has two objects to fulfil: to shorten or alleviate the fit, and to prevent its return. In treating the fit of asthma, the practitioner must bear in mind certain circumstances which materially influence the choice, combination, and extent of the means to be employed. The duration of the paroxysm; the age, temperament, and habit of body of the patient; the period he has been subject to the disease; the frequency of the attacks, and the particular form they assume; the state of health in the interval; and the presence or absence of concomitant, functional, or organic lesions of the lungs, heart, and digestive organs, are altogether of the utmost importance to be known. Bleeding in young and plethoric subjects will be required; but it will seldom do more than relieve urgent symptoms. It will rarely, if ever, put a stop to the paroxysm, and should always be practised with much caution. Antispasmodics, anodynes, and narcotics, are chiefly beneficial in the first and second forms of the disease; and in the third, when attended with severe convulsive cough. Camphor is highly spoken of by Dr. C.: it is, he says, when judiciously exhibited, applicable to nearly all the forms and complications of the disease. It should be given in doses of from three to ten grains. If the symptoms of the paroxysm were very severe and urgent, we should prefer æther, as more prompt in its effect. Ipecacuanha, besides its good effects as an emetic, is one of the best medicines that can be resorted to in asthma, and is suited to all the states of the disease, particularly when judiciously combined with other remedies. Dr. Copland has found much benefit from the distilled laurel-water, or prussic acid, during the paroxysm. He prefers the compound tincture of opium to morphia. Loebel praises very highly a combination of hyoscyamus with infusion of valerian. Belladonna has been found serviceable in combination with camphor, valerian, or assafœtida.

"Narcotics are most quick in their operation when their vapour or smoke is inhaled into the lungs. Their effects are longest delayed when they are applied to the external surface; unless the cuticle has been previously removed, as in the 'endermic' method of medication. The inhalation of the vapour of certain of this class of remedies, either alone or in conjunction with some volatile vapours, is one of the most certain and quick modes of obtaining relief in the asthmatic paroxysm.

"Stramonium is one of the best remedies that can be prescribed in the spasmodic form of asthma. It is principally used by smoking it as tobacco. During this process, the patient may either draw a portion of the smoke into the lungs, or swallow some of it, or the saliva which has become impregnated with it. Stramonium is very advantageously smoked along with aniseed, or with a small portion of tobacco." (P. 148.)

Lobelia inflata has been much employed in America, and several English practitioners of celebrity think well of its powers in asthmatic cases. In several cases in which we have ourselves given this remedy, we have been well satisfied with its good effects. Tobacco smoking is only productive of marked benefit, Dr. C. remarks, when it excites a free expectoration; and next, and perhaps equal to smoking, is the inhalation of simply emollient, or of medicated vapours, into the lungs.

To remove viscid phlegm, and to prevent its formation, expectorants, as squills, ammoniacum, and senega, are generally, and not always with proper caution, prescribed.

"The good effects of these medicines in certain manifestations of asthma cannot be doubted; but I have seen them productive of much mischief in several cases in which they had been employed. It should be kept in recollection that they are amongst the most active excitants of the respiratory mucous surfaces we possess, and extremely apt to change active congestion of the bronchial lining into inflammatory action, especially in young, plethoric, or robust subjects; and, by their effect upon the expectoration—particularly by increasing it, rendering it thinner, less viscid, and more readily expectorated, to occasion a deceptive appearance of benefit, even when they are increasing morbid action, with all its ill effects. In relaxed and leucophlegmatic habits, however, or when the expectoration is viscid, and excreted with difficulty, the skin cool, soft, and moist; the pulse soft, slow, or weak, and the urine scanty; these medicines may be given with great benefit (see F. 66, 67, 74, 350): but when the pulse is either hard, quick, or full; or the expectoration at all puriform; they cannot be exhibited without risk. They will often, doubtless, even in cases of active congestion of the respiratory mucous surfaces, afford real benefit, by exciting the capillaries to secretion, and thereby unloading them; but they may as readily kindle up inflammatory action. When combined, however, with antimonials, refrigerants, diuretics, or anodynes, the risk of mischief from them in doubtful cases is much reduced." (P. 149.)

Emetics are amongst the most promptly beneficial remedies that can be resorted to during the paroxysm, to remove both phlegm and spasm. Nauseants and diaphoretics are allied to emetics, and are often of service at the commencement, or shortly before the fit.

Refrigerants. Nitrate of potash is the most useful in conjunction with camphor, ipecacuanha, and hyoscyamus, particularly in the humoral variety of the disease. Loeffler recommends cold epithems to be placed on the chest in the spasmodic form of the disease; and several continental writers advise clysters of cold water to be administered, when asthma seems to be connected with hysteria. Revulsion and derivation, by the ordinary and well-known means, must be had recourse to when asthmatic attacks are dependent on metastasis of gout, rheumatism, &c. During the paroxysms, flatulence is often a troublesome symptom, and must be removed by carminatives. Warm coffee frequently relieves the fit of asthma; and Dr. Copland tells us that he has found green tea answer the same purpose.

For the treatment required *during the interval of the paroxysms*, we must refer to the article itself.

The more frequently we refer to Dr. Copland's Dictionary, the more reason do we find to approve of the manner in which it is executed, and to admire the close yet clear style in which, in a brief space, he has contrived to give the principal facts upon all subjects that can interest the practical reader.

Clinical Lectures on the Contagious Typhus, epidemic in Glasgow and the Vicinity, during the Years 1831 *and* 1832. By RICHARD MILLAR, M.D., Senior Physician to the Royal Infirmary, and Regius Professor of Materia Medica in the University of Glasgow.—8vo. pp. 184. Brash and Co., Glasgow; Black, Edinburgh; Longman and Co., London.

TYPHUS is a subject of commanding importance, and, notwithstanding our attention has been so frequently directed to this disease by the numerous practical and controversial essays on its origin, treatment, and prevention, which almost daily issue from the press, it is one to which we always turn with a fearful interest, as to the records of the deaths of thousands. In this metropolis, from which typhus is never absent, its ravages are in some measure checked by the prompt relief afforded, and the extensive liberality of the opulent; yet even amongst us its fatality is occasionally great. But, in other towns, and in many places, where such ample means are not always immediately at command, its ravages are dreadful. In Ireland typhus is unhappily most prevalent. Dr. O'Brien states, that in one year there were received into the different hospitals of the city of Dublin alone no less than 41,775 patients with fever; and, adding to these the extra hospital cases, the whole number in the metropolis did not, within the time specified, fall short of 50,000.

> "In Ireland alone," says our author, "it is computed that at least a million of the inhabitants, within the last twenty years, have, from this source, suffered the infection of typhus. Even bodily fatigue and anxiety of mind are found sufficient of themselves to excite the distemper, as we see in private families, where individuals, from duty or affection, have been induced to watch over, daily and nightly, the course of the disease in some near or beloved relative. Such persons, from mere exhaustion, very generally catch the fever; and I think I have observed that in these cases it for the most part terminates fatally." (P. 6.)

From time to time this disease becomes epidemic, raging more especially among the poorer inhabitants of large towns, few of whom remain many years together without a visitation. In the years 1831 and 1832, Glasgow and its vicinity became subject to the scourge; and an account of the disease as it manifested itself in that place, with some general remarks on the history, symptoms, and treatment of typhus, form the subject of Dr. MILLAR's clinical lectures.

The volume is divided into two sections, the one *practical*, the other *controversial*. In the first, the diagnosis, causes, prognosis, and treatment of typhus fever, are described; in the second, many of the theories and speculations of the past and present time are discussed; and the work concludes with some general results drawn from the reports from various hospitals, and a few remarks on Prophylaxis.

As the controversial section, although it occupies nearly half the volume, leaves the disputed points in the same undetermined state in which it found them, we do not propose to analyse its contents. The practical section is much more to our taste; for it contains a clear and sensible account of what is seen in the disease called *typhus*, originate how it may, and of what is to be done for its removal, whatever the mode in which the means may act. Let it not, however, for a moment be supposed that we undervalue theory, properly so called, or even speculation; when the one is a contemplation or enlarged and liberal view of truth, and the other springs from facts already well ascertained, being as it were the harbinger of future discoveries; but we do utterly abhor those speculations which reflect the vagaries only of an author's wayward imagination, and those theories (falsely so called) in which *facts* are made to suit *opinions*, as travellers were stretched, or their limbs curtailed, to make them fit for Procrustes' iron bed.

The anti-contagionists will object to the title Dr. Millar has chosen, as being a prejudgment of one of the most controverted points. Our opinion upon this subject is already on record; and, as we do not find anything new in our author's arguments, we shall not deviate from our resolution of confining our remarks to his practical section.

The conclusions which have been arrived at by a physician or surgeon who has had extensive opportunities of studying disease, form some of the most valuable parts of medical science: for, although the records of facts upon which opinions are founded are often considered, and with propriety, still more valuable, yet they of necessity are so numerous, and, even when the most complete, are so comparatively imperfect, that few persons are able thoroughly to understand, and fairly to estimate the value of written evidence; and none so capable of attaching their due importance to symptoms as they arise as an intelligent and unprejudiced observer.

Cullen's definition of typhus, and the refinements of the French nosologists, we need not dwell on here; they are too well known to all our readers. But, in considering the prognosis which should be given, our author places some of the symptoms in a new light, and puts others in very striking points of view. Speaking of the pulse, he records a case which should be another warning never to relax exertions, even in the most desperate and apparently hopeless cases. "While there is life there is hope."

> "A very feeble pulse, though dangerous, is not necessarily fatal, provided the accompanying symptoms are not particularly urgent. I have repeatedly restored patients, where the circulation in the arm was a mere thread, or flutter: in the following remarkable instance it was extinguished altogether. Going my rounds, in the hospital, one day, I came to a bed where the occupant seemed in the last extremity. Among other deadly symptoms, the pulse at the wrist was entirely gone. So hopeless indeed did I think him, that I passed on without any prescription. About an hour afterwards, however, some signs of vitality appearing, my clerk luckily conceived the idea that something might be done by powerful stimulants, and as deglutition remained, he plied him with large and repeated doses of wine, spirits, and sulphuric ether. The experiment succeeded. The pulse soon rallied, though feebly; the previously threatening

symptoms declined by degrees; and at my visit to the hospital next day, instead of dead, I found the man lying with his powers of life revived, the pulse beating respectably firm, the other functions improved. Not the slightest relapse occurred. In two days the patient was out of danger; after the usual time he was dismissed cured. This is no doubt a solitary instance, but it shows that we should never despair." (P. 14.)

The following cautions with respect to the state of the tongue and the appetite are well worthy attention.

"A return of the tongue to its natural state is always reputed a favorable sign, and the amelioration generally takes place first at the sides; the mark, however, is not always infallible. Occasionally the tongue recovers itself, though the other symptoms do not yield, while, on the contrary, it sometimes continues foul or dry, after the other morbid appearances recede. In the first instance, we look for a return of appetite, but are disappointed; while in the second, some desire of food returns, though unexpected. When the disordered state of the tongue thus survives the fever that gave it birth, it can no longer be considered as an index, or guide, to the general condition of the system: it is a mere insulated sequela, in its nature purely topical, and to be treated accordingly."[*] (P. 15.)

"With respect to the revival of appetite, it is needless to say how gladly it is to be hailed, provided, at least, it be coincident with other favorable signs. A curious example to show the necessity of this prognostic limitation occurs in delirium. During this state, patients are not unfrequently observed, not only to receive food unconsciously, when presented to them, but to swallow it with all the apparent greediness of hunger. Hence nurses are often imposed upon. If you ask a nurse how the sick person takes his food, she will reply perfectly well: but if you find that at the same time the pulse, the tongue, and sensorial functions, have attained no improvement, you will then detect the fallacy, and discover that this reported restoration of appetite is merely illusory, and is neither more nor less than a symptom of delirium, or of the hallucination of mind that forms so prominent a symptom in our low contagious typhus." (P. 16.)

The symptoms of derangement in the sensorial functions, and the prognostic signs deducible therefrom, are very graphically drawn. They have evidently been often seen and considered before they were described.

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[*] "A curious circumstance with respect to the tongue may be often noticed in patients labouring under delirium. If you desire them, in this state, to put it out, they readily obey; but, unless you urge them frequently, they often neglect to draw it back. The functions of memory, and of the association of ideas, are here impaired, along with other sensorial powers. The delirious person almost instantly forgets that the tongue is thrust out of his mouth, and the trains of the usually catenated muscular motions being for the time interrupted, he feels no impulse to replace it in its natural situation."

"There seems here abundant ground for the belief, that the first impression of the typhus poison, or exhalation, when applied to our bodies, is always made on the nervous fibre, or tissue, and that hence arise those various derangements of its grand centre, the cranial brain, sometimes the spinal, that form such prominent features of the whole disease. I shall begin with headach. This is a symptom almost invariably accompanying the commencement of typhus, yet I do not know that it furnishes a basis for prognostic. We observe it of different degrees of constancy and intenseness, yet generally yielding to remedies long before the termination of the fever. If peculiarly violent, it may indicate some serious disorder of the brain, or its membranes, and so far, must be considered of evil import; yet we seldom can draw from it any certain prediction concerning the final issue. Delirium, its frequent concomitant, or sequela, is a far more important, or terrifying, appearance. This, too, admits of great variety, in point of severity, and continuance. Sometimes it appears only during night, and ceases during day; at other times, it harasses the patient equally during both periods. At one time it is violent and furious, requiring coercion, and the strait-jacket; at another, quite mild and tractable. The hallucinations of mind attending it are no less variable. Sometimes we observe the trains of ideas to be sad and mournful, at other times cheerful, joyous, and full of exultation. Patients occasionally think they are pursuing their ordinary trades and occupations, with all their usual cares, and anxieties.* One man appeared actuated by deep remorse and despair, insisted that he was condemned to be hanged, and was constantly talking about the day of execution. In some, the predominant feeling is terror, and terror in the most intense degree; when you approach their bed, they scream out, start up with the most agonizing fear pictured on their countenances, try to escape, or hide themselves beneath the bedclothes.†

"Under all these, or other shapes, delirium must ever be regarded as an alarming symptom. How far one variety may indicate greater danger than another, I confess myself unable to decide. Judging from my own experience, where extreme and unappeasable terror is the predominant feeling, I would consider it of fatal augury. Under this unfortunate hallucination, I never knew a single instance of recovery. At the same time, the examples that have fallen under my notice are too few to draw from them any certain or general conclusion.*

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* "Fever hospitals abound in such instances. One of Dr. Cheyne's patients in the Hardwicke Hospital, Dublin, was a cooper. He was caught one night taking asunder the frame of his bed, in order to make a tub out of the spars.—A cowherd, confined in the Cork Hospital, mistook the sick around him for so many cows, and was frequently trying to rouse them by means of his accustomed cries. (Dr. Pickells, in Irish Med. Trans., vol. iii. p. 108.)—A carter in our own wards was incessantly driving his cart, and talking to his horse. This hallucination continued no less than four days and nights; but the man recovered.

† "A patient in our female ward, after escaping from fever, was seized with acute parotitis, which occasioned violent delirium. Under its delusion, she insisted on having her head cut off; not with any view of self-destruction, for that never entered her mind, but solely, it appeared, for relief of the pain. To obtain her purpose, she first of all applied to the clerk; but, being unsuccessful, had recourse to me at the usual visit. Being again refused, she burst into tears, exclaiming that she was shamefully and cruelly used, and that nothing was done for fever patients in the Glasgow Infirmary."

"Equally to be dreaded with active delirium, is that profound coma, where the patient cannot be roused—where the pupils are either morbidly contracted, or dilated, and where the pulse is, at the same time, tardy or intermittent. No man will view these symptoms without the most serious apprehension. Luckily, they do not occur with very great frequency in typhus. In opposition to all this, however, there is a species of coma, that, however paradoxical it may appear, I hold rather desirable than to be dreaded. The patient here lies in a state of mild stupor, or, more correctly, seems buried in a profound and imperturbable sleep. The senses, for the time, may be said to enjoy a holiday; for he neither tastes, nor smells, nor feels, nor sees, nor hears. What passes within we know not, but there is complete interruption to every disturbance from without. All external impressions pass over him unheeded and unfelt. When you rouse him up, and this capability of being roused forms the distinction between this and the other dangerous coma above noticed, he mutters a few words, and then sinks back into his wonted repose. This singular state, the *coma somnolentum* of nosologists, will often continue for several days, and patients under it seem for a time free from all contest with the fever, and as it were to lay in a reserve of strength to meet the future contingencies of the disease; at any rate, it is rather a favorable than unfavorable sign. I never knew an individual die who had passed fairly through its ordeal.

"In direct contrast or contradistinction to this *coma somnolentum*, we sometimes meet with another affection, for which, however, nosology has not yet furnished a name, where the different senses, instead of being preternaturally obtuse and torpid, are found, on the contrary, morbidly and inordinately acute. Common impressions, in place of being indifferent or pleasurable, excite nothing but uneasy feelings. The mildest light is painful to the eye—the softest sound is torture to the ear. But the chief seat of the evil seems to lie in the nerves of the skin. So immoderately tender and sensitive are these nerves, that the patient cannot suffer himself, even for a moment, to be touched. If you lay hold of his hand in order to feel his pulse, he instantly screams out, and entreats you, sometimes with anger, sometimes almost with tears, to desist. The same unnatural sensitiveness extends over the whole body. The pressure of the bed or bedclothes is intolerable, and he is constantly changing his position, which, instead of alleviating, only enhances his uneasiness. Jactitation is extreme, and he is entirely deprived of sleep. It is needless to remark how much such a condition must necessarily aggravate every existing symptom of fever. As to the exact prognostic inference, or how much danger it may indicate, I have seen too few instances of this curious affection to determine. Experience, though limited, has taught me to regard it of dangerous, or fatal tendency. Two cases have appeared in our wards during the last twelvemonth, both corroborative of this conclusion; one, that of a man where, though it assumed a chronic shape, the issue was finally unfortunate: the other that of a female, where it was highly violent and acute, and where the patient died the very next day after its appearance.

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* "Upon the whole, there is no single symptom of fever that indicates greater danger than delirium: every experienced practitioner, I believe, will subscribe to this opinion. Dr. Grattan, of Dublin, asserts that if this evil subsist so long as three days and three nights, there are few persons that will escape with life, such is the exhaustion its constant excitement produces. (Irish Med. Trans., vol. iii. pp. 440-41.) This perhaps is taking too gloomy a view. You have seen various cases treated successfully where the symptom was of at least three days' duration."

"In the two singular nervous derangements above described, we found the whole of the external senses, without exception, perverted: occasionally, again, it is only two of them—the eye and the ear—that suffer. Deafness is a most common symptom, nor do I think !! it bodes danger: some practitioners, on the contrary, regard it as favorable. It will at least exempt the patient from the irritation of noises. It is often exceedingly inconvenient to the practitioner, however, by preventing due inquiries into his patient's condition. As for the eye, the usual perversion of vision consists in spectra of small size floating about in the atmosphere around, more particularly assuming the appearance of flies (muscæ volitantes), and which, we are told, the sick are perpetually endeavouring to catch. Of this symptom I know but little from personal experience; I have no recollection about it, nor do I think I have seen it above four or five times in my life.

"Considering with what a deadly grasp typhus poison lays hold of the brain and nerves, we need not wonder that convulsive and paralytic affections should appear so frequently in the disease, or should constitute some of its principal symptoms. Among the first may be chiefly noted those short and jerky motions of the forearm and hands so familiar to the malady, which, as they occur in a place where there are so many tendons, both long and short, are usually designated by the sort of technical phrase, *subsultus tendinum*, or jumping of the tendons. Similar convulsive twitches are observable in other parts, as in the extremities, and more particularly about the muscles of the upper lip, where they are by no means unfrequent. As to the prognosis, authors generally take a gloomy ! view, considering them as of very dangerous import: a conclusion, however, not warranted by experience. In our ordinary typhus they are seldom found altogether wanting; and, so far as my own observation reaches, as many patients recover after them as of those who never experienced them at all. Along with subsultus tendinum, is also commonly arranged another sign with like technicality, termed *carpologia*, or chaff-gathering, because it consists of a similar series of brief shaking motions, as if the sick were picking fragments of straw, or chaff, from the bedclothes. Perhaps this affection has been wrong placed, and should be considered a mere visual hallucination, rather than a convulsion. Whatever be its nature, it is of rare occurrence. I have certainly met with it, but by no means frequently.

"As to the paralytic affections induced by the poison of typhus, none is of more deadly omen than palsy of the sphincter muscles of the bladder and rectum, giving rise to an unconscious and involuntary discharge, in bed, of the urine and fæces. The total oblivion here of all ordinary or established feelings or habits, shows the deep injury that has been inflicted on the sensorial organs, and the risk to life is in proportion. I know of no symptom that ought to inspire a greater despair of recovery in the mind of the practitioner. Exert ourselves as we may, it will generally be found an almost certain precursor of destruction. Another paralytic affection occurs in the bladder itself, though apparently attacking a different portion of the organ. In the former instance, the sphincter alone was in fault, but here it is sound, while the paralysis affects the muscular fibres of the interior, so as completely to disable the viscus from expelling its contents. There is thus produced what may be called a typhus dysury; and, if we believe high authority, it is of more evil augury than even palsy of the sphincter. The late Dr. Gregory, of Edinburgh, used to declare, in his lectures, that he never knew a single patient survive after the occurrence of this symptom.* The disease here I have imputed to the bladder alone, without implicating the kidney, and I think on good grounds. The urine which we are often obliged to draw off by the catheter, affords sufficient testimony that the gland itself has been performing its function.

"Another, and most dangerous paralytic affection in fever. I had almost forgotten to mention, namely, palsy of the muscles of deglutition. We have lost four or five patients mainly from this cause. The power of swallowing being lost, all access of wine or other medicine to the stomach, of course, ceases. Enemata afford but an imperfect resource, and I commonly found the sick too weak and exhausted for Jukes' apparatus.

"Among other effects of typhus poison, none is more striking than the extreme prostration of strength it is apt to occasion, reducing the whole frame as it were to a state of almost infantine imbecility. This happens sometimes at the beginning, more frequently during the currency of the disease, either from the more gradual operation of the virus, or from simple exhaustion. When it exists in excess, and then it is to be highly dreaded, it becomes easily cognizable by the posture of the sick. If you find your patient lying supine, or stretched flat upon his back, for days together, and unable to stir a muscle, there can then no doubt remain that this perilous, and distressing symptom has fairly taken place. You must endeavour by every mean in your power, to support the languishing strength, though too often your efforts will be vain. The fatal debility continues to creep on, from day to day, or from hour to hour, encroaching more and more on the powers of life, till at last it becomes a mere step or prelude to dissolution." (P. 19.)

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* "There is no rule however without exception, particularly in medicine. We have met with two cases, where, though the disease was far advanced, yet the patient survived this dangerous symptom: one was that of Mary Murray, (vol. ii. p. 89.) The name of the other has escaped my memory."

(To be continued.)

On the Practical Prevention of Dry Rot in Timber; being the Substance of a Lecture delivered by Professor FARADAY, F.R.S. &c., *at the Royal Institution, February* 23, 1833.—8vo. pp. 24.

THE subject treated of in this Lecture is one of vast importance; one to which persons have hitherto turned their attention with but little practical advantage; and, although numerous experiments have been tried, to prevent or retard the destruction of timber by what is termed *dry rot*, the pest of the British navy, none of the plans proposed have been successful.

Such being the state of the case, we confess that it was with some misgivings that we entered on an examination of the evidences brought forward by Mr. Kyan in favour of a process, by which he promises to prevent dry rot occurring in sound timber, and even to arrest its progress in that which is in part decayed.

We did not, however, come to this subject unprepared to enter fully into the details; for some years ago we ourselves made many experiments upon different kinds of timber, in order to ascertain the causes of their relative durability and decay.

The results of these experiments were published in the Journal of the Royal Institution, and the conclusions then arrived at have perhaps led us more fully to appreciate Mr. Kyan's process, than, without such preliminary knowledge, we should have been capable of doing.

We then shewed that, although wood of all kinds is formed of tubes and cells, that the cavities of these are more or less completely filled in the timber afforded by different trees, giving to it the well-known different degrees of weight and firmness. That upon the nature of the matters stored up in these cells the other physical qualities of the wood, as its colour, smell, and taste, depend. Dutrochet shewed that the *woody* structure of ebony is as white and as light as poplar, and that its weight and black hue is owing to the dense matter contained in the cellular structure, which may be dissolved and removed by proper solvents, leaving the ligneous structure entire. From these and other observations the philosophy of decay can be easily understood; for, if immature or ill-seasoned wood be employed, the contents of the cells will undergo various chemical changes, such as putrefaction, &c., forming a fit and favourable soil for fungi, not only for the true dry-rot (Merulius lacrymans), but for a whole host of other wood-destroying plants.

In the essay already referred to it was also shewn that the reason why certain woods, which are durable in dry situations, are extremely perishable in wet, is that the materials laid up in the cells, and on which the firmness of the wood depends, is in some easily, and in others sparingly, or not at all, soluble in cold water. Thus this matter is much less soluble in good oak than in deal or beech: and also in some kinds of oak than in others. For example, our British ship-building oak (*Quercus pedunculata,*) forms in its ligneous cells matter scarcely at all soluble in water; whereas another oak, also growing in this country, but much more abundant on the continent of Europe, forms matter easily soluble. Hence the timber of the one will endure unchanged for ages; while the other, if exposed to the vicissitudes of the weather, heat and cold, wet and dry, will decay with rapidity. To the introduction of this inferior oak, *i. e.* to the consumption of so much more foreign timber than usual in our dockyards, may be traced the comparative perishability of many modern-built ships: for vessels, instead of lasting, as they have been formerly known to do, for half a century, are now often broken up within two, three, or five years; and some have been obliged to undergo a thorough repair even before they were launched.

Now, from what has been said, it is evident that if the matter which is soluble in perishable woods, or that which is prone to run into decomposition in immature timber, could be rendered in the one case insoluble, and in the other the tendency to putrefaction be restrained, both would be brought into a condition similar to that of wood which is naturally of an enduring kind. And this desirable object appears to have been attained by Mr. Kyan, who has our warmest thanks for the energy with which he has performed the investigation, as well as for the benefits which his success must confer upon society.

Having rendered, as we hope, the rationale of decay intelligible to all, we shall now proceed to give some extracts from

Professor Faraday's lecture upon Mr. Kyan's process, which, we feared, from the concise manner in which the subject was obliged to be treated, might not be clearly understood without some such prefatory remarks.

After a few introductory sentences, Dr. Faraday observed,

"With regard to decay in general, and to that of wood in particular, which gives rise to the destruction now to be guarded against, it was hardly possible to say anything definite as to the cause of that decay, for it seemed to him that cause and effect almost replaced each other; that is, what was a consequence at one time, was at other times a cause of the final ruin of those fibrous matters which are used for domestic purposes. On reference to the different specimens around him, instances would be seen of rapid and extensive decay, which it is the object of the process he had to bring before them to prevent. For instance (said Pr. F.), here is exhibited a beam of wood in which the one part is rapidly passing to decay, and the other part is sound, or nearly so. There is a piece of wood on the table made into a thin plank, and laid over the internal woodwork. It has been painted outside, and appeared to the eye to be good, but after a short time the rot caused it to decay: the rot had run from the interior to within the twentieth part of an inch of the paint, which, aided by the air and light, had stopped its progress. Pr. Faraday shewed another specimen which had been sent to him by Professor Burnett, of the results of the same kind of decay, or what is called the Dry Rot fungus. It was the most magnificent he had ever seen, and was formed in a sort of gutter or wooden trough across a large room, the conservatory of his Grace the Duke of Norfolk. The fungus had prospered so much, that even its fructification was fully developed. Those who might wish to examine it closely would see that the plant was extending itself from place to place, and producing here and there aggregations of seed-vessels consistent with its organic arrangements. Another specimen, was a case of decay from animal operations, which had been going on at Woolwich; it was taken from a large mass of timber, so penetrated by the worm that it appeared to be like a piece of sponge. There was another piece similarly circumstanced, which had been a part of one of the timbers belonging to Brighton Pier. It in the first instance had been fifteen inches square before being placed under water; and it was wonderful to observe how, by decay and the action of various insects, it had been brought to its present state. Another specimen, was part of a mast of a vessel, which, though to appearance sound on the outside, was in the inside gone, as if it had been hollowed out by a workman's tool: the decay had taken away the strength of the mast. These being the conditions to which timber had been brought in domestic and naval applications, it has been admitted in all times a desideratum to obtain some substance which should prevent such kind of action." (P. 4.)

After adverting to the various other plans which have been proposed for the prevention of dry rot, he continued by saying,

"He might dispose of all these, because, having been tried fairly and having failed, it was presumed the trials had not led to any final application. He should take up only that one which he had considered, (as far as its chemical principles were concerned, and as far as it was connected with the case,) and thought to be borne out by the previous knowledge of the substance used, as being sufficient for the purpose proposed; requiring only to be tried to justify the full assurance of its use. The process he had to lay before them depended upon the application of an anti-destructive, which had been long known as a very active body in all such cases, namely, Corrosive Sublimate; for every anatomist and every visitor of an anatomical museum knows that corrosive sublimate was, and is, used from time to time to prevent the decay of the most delicate organic tissues and parts, even such things as the brain itself, which are liable to putrescence; and by the application of this metallic preparation they can be prevented from going to decay, and be preserved for any length of time. This was a matter of common knowledge; and Sir Humphry Davy and other chemists have referred to the power of corrosive sublimate, and the nature of its application. An application was made to him (Pr. F.) many years ago, which afforded him great gratification at the time, for the purpose of attempting to preserve Earl Spencer's library from decay by the book-worm. It had been proposed to apply corrosive sublimate; and Sir Humphry Davy was referred to, who honoured him by asking his opinion whether the volatility of that body, (called corrosive sublimate from the very circumstance of its being purified by volatilization,) would not be liable to create such an atmosphere where the books were placed as would be injurious; and which, though not felt for one, two, or three days, would affect those who wrote and studied in the place. His opinion then was against the corrosive sublimate, which agreed with that of Sir H. Davy. They both thought it might possibly be hurtful to those beings who were more worthy of attention than the maggots in the books.

"A gentleman of the name of Kyan, considering the property of corrosive sublimate, proposed to apply it to timber for the prevention of the dry rot: that is, cases of decay, whether they arise from the action of the seeds of cryptogamous plants, vegetating in the wood, or from the presence of the albuminous parts of the tree. Mr. Kyan thought the evil might be stopped; that the commencement even might be prevented by the application of corrosive sublimate, in consequence of the chemical combination which takes place between the corrosive sublimate and those albuminous particles which Berzelius, and others of the highest authority, consider to exist in and form the essence of wood: which being the first parts that run to decay, cause others to decay with them. Mr. Kyan's conviction was such, that he went to the Admiralty to place it before them. They required certain trials to prove the soundness of the application, which trials he (Pr. F.) would now have to bring forward. After these were carried on for two or three years, the Admiralty advised Mr. Kyan to take out a patent; and were still engaged in watching the progress of these trials since that period.

"He would now tell them how it was proposed to prepare timber, and what the results were. The proposition was, to soak the timber itself in a solution of corrosive sublimate. Pr. F. then shewed the model of what is termed a tank, in which the timber is to be immersed in the solution. He said the meeting must not be struck with the name of that which a few years ago was rather expensive, but now a cheap application, for a pound of it did not cost much in proportion to the good that would ensue; which he (Pr. F.) thought would be fully confirmed by the result, after a few years' experience. A solution of this substance is made, and timber is placed in the vessel. The timber is held down in such a way, that, when immersed, on the fluid being pumped in, it cannot rise, but is kept under the surface, there being beams to retain it in its place. There it is left for a week, after which the liquor is pumped off, the wood is removed, and it comes out in the state of the samples before him. This being done, the timber is dried, and said to be prepared: it has been applied by Sir Robert Smirke to the new buildings in the Temple, and has been tested in a very extraordinary way, of which some account will now be given.

"Besides the application of corrosive sublimate to timber, it has been applied to various fabrics not composed of wood, as, for instance, canvass, cottons, tows, and hemp, to prevent their decay. Before him were some of the pieces submitted to trial by order of the Admiralty, three years ago, in the fungus-pit at Woolwich, which he (Pr. F.) went the other day to see opened. It was a pit dug in the yard, and enclosed by wood on all sides, having a double wooden cover; it was damp of itself, and into this were put various kinds of wood of which they wished to make trial. One specimen was a piece of timber which came out at the end of three years as sound as it went in; but the unprepared timber had decayed up to the very joint. No part of it had been left. It had decayed and become rotten throughout, but the piece before them was left whole and sound, and fit for the construction of vessels. Last week he saw a large cube of wood which had been there first for three years; it was taken out, examined, and put in for two years more, altogether making five years. That cube of wood was again taken out, and examined by him on Tuesday (the 19th February); it was perfectly hard and sound. There was no sign of decay in that wood which had been submitted to the rotting action for five years, nor of that destruction which seems to have come on so soon in the same pit with other pieces of wood.

"Sir Robert Smirke had a couple of posts put up under a dropping eave, and both were exposed to the same actions. After a certain time one of them decayed; the other still stands, having been preserved by the power of this substance. There were before him some specimens of canvass and cotton which had been in various ways exposed to damp, placed in a cellar on the 10th December, 1832, and left till the 21st February, 1833: they were taken out for the purpose of being exhibited that evening. Another, a prepared and unprepared piece, which had been coiled up in a cellar from the 15th December, and left to the 21st February, 1833. The opposite effects seen were produced by the same circumstances of exposure on prepared and unprepared calico. One was as it went in, but the other was the calico corresponding to it, which had rotted and decayed. It was not possible to unfold without destroying it, yet it had been similarly exposed as the first. Nothing could here deceive regarding the appearance of mildew; the difference between the two was so evident, that no person could make a mistake about them: one had run into decay and was falling to pieces.

"Now he (Pr. F.) must confess, for his own part, that he was perfectly satisfied of the preservative effects of corrosive sublimate. He knew beforehand that it would preserve things far more liable to decay than timber, canvass, and cotton, but had had doubts as to its application. His query, in the first place, had been, was this preventive or anti-corruptive substance of such a nature that it could remain there, or was the effect not merely a temporary one, that would pass away after a time; and in the timber of vessels which were exposed to the bilgewater, and other water, where vessels were not coppered, was the sublimate not likely to be removed, and its effects destroyed? And, if that were not the case, was there not a fatal injury that might arise from the production of a noxious atmosphere? The answer was 'No, we expect not; for chemical combination has taken place between the corrosive sublimate and the body to be preserved; and it prevents the destructive power going on, by combining and forming a new chemical compound with the albuminous matter of the wood.' This being to him at that time a doubtful opinion, he wished to obtain some proofs for his own satisfaction." (P. 7.)

The lecturer then proceeded to detail experiments which he had made, and which had convinced him of the truth of the anticipation above expressed. He proved that the corrosive sublimate enters into chemical combination with the destructible matter of the wood, converting it into insoluble and enduring timber.

"Therefore it was not to be expected, when they thus come together by a kind of chemical union, that the properties of the original substance should be free to act. No; part of the properties of the corrosive sublimate were subdued, and, in fact, the substance was not in that state in which it could be volatilized, or removed at ordinary temperatures. Very simple proofs would be satisfactory. It occurred to him to take some of the prepared canvass, washing it thoroughly in water several times, to see if the sublimate could be removed from the cloth. Calico was taken in preference, because it seemed more easily to allow the removal of the new chemical combination, if that could be effected. He thought it would be the most conclusive proof to be obtained; for, if the properties of the compound would resist the application of water in calico, they would of course do so in timber, where the substance, combining with the sublimate, was contained in the pores of the sap-vessels. Not being satisfied with the work of others, he washed the prepared calico himself in water: he then shewed a board on which he had put this washed calico; on one part was shown the portion of prepared calico which had been washed, and on the other a similar piece unprepared. The latter was covered with a coat of fungus nearly half an inch thick, the former was quite free from it. To be certain whether the calico so prepared and washed did retain any mercury, and to assure himself that it had not been accidentally so placed in the damp cellar that it was left uncorroded, while the unprepared piece was corroded, a portion was treated with dilute nitric acid, by which means he could, though to the injury of the whole material, separate the mercury. By washing the prepared calico in water, he was unable to obtain any portion of the metal, but the mercury was separated by nitric acid, showing that it had been in combination: and there was no reason, after such trials, to suppose it could be washed away, or rise as vapour, and be injurious. These two or three experiments influenced him in giving his judgment, that the process would be found effectual in preserving timber. He added, I think the improvement so great as fully to justify its extensive application." (P. 12.)

BIBLIOGRAPHICAL NOTICE.

The Origin and Progress of the Malignant Cholera in Manchester, considered chiefly in their Bearing on the Contagiousness and the Secondary Causes of the Disease. To which are added some Remarks on the Treatment. With an illustrative Chart. By Henry Gaulter, M.D., of Magdalen Hall, Oxford, &c.—8vo. pp. 206. Longman and Co., London.

Dr. Gaulter is one of the very few writers who have recently approached the much discussed, but certainly not definitely settled, subject of cholera, with sufficient ability to induce us again to recur to it: but in his work we find so very interesting a sketch of the disease as it appeared at Manchester, together with so sound and so philosophical a view of many points that have excited the attention of many, and even the temper of some physicians, that we should neither do justice to him nor to our readers, if we did not give some account of the general objects of his work.

It appears that at Manchester the local authorities did not sleep upon their posts, nor neglect their duty; for, *before* the breaking out of the disease, the town was inspected by a well-organized board of health, and, from their report, the most dreadful havoc might be fairly expected, if they were visited by the common enemy, cholera. In the quarters of the poor, there were such scenes of filth, and crowding, and dilapidation,—such habits of intemperance and low sensuality,—and, in some districts, such unmitigated want and wretchedness, that the picture of the "moral and physical state" of the poor, which was drawn by a member of the board, seemed, to the minds of many among the more easy inhabitants, as little less than a malicious libel on the town. But still, Dr. Gaulter says that the visitation of the disease was far more limited, and far less destructive, than had been predicted. "The comparative mildness of the invasion, however, far from lessening the interest of the inquiry, increases it. Can any reason be assigned why a population, represented to be sunk in the deepest poverty and immorality, should have escaped on such easy terms; why a soil, so seemingly favourable to the pestilence, should happily have yielded so scanty a produce of victims?"

Dr. Gaulter examined the first three hundred cases that occurred in Manchester. He commenced his very important investigation with a full sense of the errors and fallacies to which the inquiry was liable. The difficulty of getting satisfactory evidence from the poor and uneducated is well known: "nor are the poor the only deceivers. The inquirer is himself, from an unconscious bias, not seldom in pursuit less of truth, whatever it may be, and wherever it may lead, than of some preconceived opinion, or exclusive system. He is a contagionist, and puts but one kind of question, or hears but one class of answers: he is an adversary to contagion, and interrogates only on localities and miasm." This is most unfortunately but too true. Most men have formed some opinion before they begin their inquiries, and these are too often conducted with the *sole* object of supporting that opinion. They examine their witnesses with the same partiality that an advocate does in a court of law, whose only wish is to gain the day. If the true bearings of the case suit his purpose best, the truth, and all the truth, may probably appear; but if, on the other hand, a little *ex-parte* testimony suits his case better, why then one side of the question is very hard pushed, and the other is evaded. That such ought not to be, but that such *is* the spirit with which medical investigations are conducted, cannot be denied, and must be deeply lamented by every real philanthropist. In justice to Dr. Gaulter, we must say that he is one of the "few impartial." Judging from the mode in which his inquiries were made, and from the inferences he draws from the information he obtained, it appears certain to us that his object is truth, not victory.

At Manchester, as in many other places, the precautionary measures adopted were far from adequate to the intended purpose: Dr. G. humourously observes, that "the board resolved on doing something, seemed to have copied the example of the country gentleman described by Addison, who thought to keep out the crows by nailing up his park-gate." "But," says Dr. G., "whatever the precautionary measures had been, the same result would have followed; for the coaches did not bring it, and it neither sailed here, nor glided suddenly into the midst of us, propelled by the force of steam: it arose upon the spot." Of the correctness of this opinion he gives ample evidence. Notwithstanding the contrary impression which so generally prevails, nothing appears to Dr. Gaulter better attested in the records of this epidemic, as nothing is more remarkable, than that, while it is undoubtedly communicable from man to man, its dissemination over so large a part of the habitable globe has been, on the whole, affected without contagion, by the successive springing up, sometimes in distant, but more commonly in adjacent places, of the poison, whatever this may be, that causes the disease.

Dr. G. follows up this opinion by making some very pertinent remarks respecting the fallacious modes of argument adopted by those who assert that the disease is always, or never, contagious; and it must be regarded as a strong proof of his ingenuity and originality of thought, that he finds room to say much that is new upon a subject that we really thought had been worn threadbare, and deprived of the slightest remnant of novelty.

In the *treatment* of cholera, the one great indication, in the author's belief, is to stop the serous hemorrhage from the bowels, or to assist nature in that spontaneous effort to suppress it which she seldom fails to make. The venous injection was tried in about eight cases, all of which terminated fatally. The saline remedies of Dr. Stevens were not confided in, having been found ineffectual in the stage of collapse, and inferior to the ordinary practice in the incipient stage. The cold-water plan of Dr. Shute was adopted in two or three instances, without the extraordinary benefit which attended the use of it in his own hands. We should have been glad to know, in more precise terms, *what* benefit was obtained from this plan. It might not be "extraordinary," and still sufficiently advantageous to justify its repetition. The only novel practice which was thought to succeed was that of administering repeated doses of tartar emetic; and upon this plan of treatment there is a very interesting letter from Mr. Langford, at p. 151.

REPORTS
FROM HOSPITALS AND MEDICAL INSTITUTIONS.

GLASGOW ROYAL INFIRMARY.

Cases of Urinary Abscess. [From MACFARLANE's *Surgical Reports.*]

CASE I. *Stricture of the Urethra, giving rise to Urinary Abscess and Extravasation: Cure.*

R. C., æt. thirty-five, admitted 23d May, 1831. Had frequent calls to void urine, which was passed after painful and long-continued straining, in a twisted stream not larger than a thread. These symptoms commenced five years before, after a gonorrhœa, which was cured by stimulating injections. On the introduction of a small catgut bougie, a stricture was discovered about three inches from the orifice of the urethra, behind which a good deal of thickening and irregularity of the canal was felt for more than two inches. There was also a second stricture behind the bulb, through which the smallest instrument could not be passed. The prostate gland was enlarged.

On the evening of the day on which he was admitted, and before I had an opportunity of examining his urethra, he had a smart rigor, followed by the usual febrile excitement. On the following day, I found him labouring under acute peritonitis; the abdomen was tumid and exquisitely painful; there was incessant vomiting, urgent thirst and constipation; the countenance was anxious, and the pulse small, sharp, and one hundred and twenty in the minute. He was put under the antiphlogistic treatment, both general and local; but for several days the symptoms continued alarming, and did not subside until ptyalism was excited by repeated doses of calomel and opium.

On the 1st of June, he complained of increased pain and difficulty in micturition; and his urine was for the first time tinged with blood. A small, hard, circumscribed tumor was discovered in the perinæum, immediately behind the posterior edge of the scrotum, where the irregularity leading from the first stricture terminated. As it seemed to threaten the formation of an abscess, leeches were applied, followed by fomentations, an anodyne enema, &c.; but although it got larger during the two following days, it did not fluctuate. At this time I hesitated as to the propriety of opening the tumor, particularly when I found that, by pressing it, a few drops of pus escaped from the urethra. It appeared probable that a portion of the canal connected with the external tumor had ulcerated, and that the pus was contained in a circumscribed cavity in the corresponding part of the corpus spongiosum. Had I been satisfied that this supposition was correct, I would not have hesitated to make a free incision into the part, from a conviction, that had the urethra been actually perforated by ulceration, the urine, which might have been prevented for a few days from escaping into the surrounding parts by the lining of lymph forming the walls of the abscess, must soon have destroyed this barrier, and become extensively diffused into the cellular texture of the perinæum and scrotum. But as the perineal tumor was small, hard, and circumscribed, and as it was possible that the pus, which could be pressed from it along the penis, might be furnished from the surface of the dilated urethra, immediately behind the stricture without the existence of a breach in the canal, I determined to watch the case narrowly, and to delay making an incision until the appearances were less equivocal. I have seen more than one case, where, by gradually pressing the pus along the urethra, and preventing its accumulation at the affected part, the tumor has disappeared, and an external opening been rendered unnecessary. I would therefore be extremely cautious in making incisions into the perinæum, unless extravasation of urine had actually occurred, or was unequivocally impending, especially in the unhealthy and broken down individuals who are so generally the subjects of this disease.

On the evening of the 3d, the tumor in the perinæum began to increase, and to lose its circumscribed form; and, before the hour of visit on the 4th, the tumefaction had extended along the scrotum, penis, and groins, to near the umbilicus: the skin was red and hot, and there was less urine passed by the penis than formerly. It was evident that the abscess had given way, and that the urine was escaping by a preternatural opening in the urethra. The patient was therefore placed on a table, and secured as for lithotomy, a catheter was passed until its point rested on the stricture, and an incision two inches in length made into the tumor, giving exit to pus and urine, and showing that the walls of the abscess were thick, and lined by a dense layer of lymph. One or two gentle attempts were made to pass a small catheter into the bladder, both by the penis and wound, but, from the soft and sloughy state of the parts, this was impracticable. It was to be expected, however, that the free opening which was made would permit the urine to escape, and put an end to farther extravasation. A pledget of oiled lint was introduced between the edges of the wound; the tumefied integuments were freely scarified; warm fomentations applied; and he was ordered a grain and a half of opium at bed-time.

5th. Is much better, has passed a quiet night, and countenance is less anxious; swelling and redness of integuments greatly diminished; voids his urine freely through the wound; pulse one hundred and sixteen, soft; tongue white, but moist.

For several days the constitutional symptoms continued moderate, and the integuments of the scrotum and penis regained their natural appearance without sloughing taking place; but there was a good deal of hardness and erysipelatous redness of the abdominal integuments, from the symphisis pubis to near the umbilicus. On the 10th, fluctuation was felt; two openings were made, and several ounces of fetid pus, with some shreds of dead cellular substance, were discharged. This abscess was found to communicate with the opening in the perinæum, showing that there was a considerable destruction of the cellular texture between the penis and pubes. Ordered full diet, and six ounces of wine daily.

The symptoms continued favourable; the discharge from the different openings was moderate; their edges were florid and granulating; and his health was improving. On the evening of the 23d he had a smart rigor, and at the visit on the 24th he complained of pain, on pressure, in the lower part of abdomen; the pulse was one hundred and thirty, sharp; the tongue dry and furred; the skin hot, but moist; and the respiration hurried; the half of the wound in the perinæum had closed, but the urine continued to pass through it in a full and free stream.—Cluniluvium stat. Ol. Ricini.

On the 25th, the febrile symptoms and abdominal pain had almost subsided; and in a few days I again attempted to pass a catheter into the bladder, but without success. The urethra, from about the middle of the scrotum to the bulb, was so soft and ragged, that the instrument, by the slightest force, could have been passed in any direction: I therefore ceased to attempt its introduction, until the parts had become firmer and more consolidated.

On the 2d July, the openings in perinæo and above pubes were nearly healed; and the whole urine was voided by the penis in a small irregular stream. On the 20th, the parts were completely cicatrized, and for the first time a small catgut bougie was passed through the stricture into the bladder. This was repeated daily, and retained for nearly an hour, the size of the instrument being gradually increased, until the largest could be easily introduced. By this treatment, the stream of urine increased; the stricture was destroyed; the irregularity of the canal removed; and he was dismissed, cured, on the 29th of September.

The necessity for prompt and active treatment, and the great benefit of free and early incisions in this class of diseases, are now well known and acknowledged. The object of the treatment consists in laying freely open the perineal tumor, so as to promote the egress of the urine, and prevent its extensive diffusion in the cellular texture. When extravasation occurs, it extends with great rapidity, and the vitality of the parts is speedily destroyed. I have, however, succeeded in two cases, where the scrotum and penis were red and swollen, by early and free incisions, followed by warm anodyne fomentations, not only in arresting the progress of the extravasation, but also in preventing that destructive sloughing of the parts which is so generally and rapidly produced. The extent to which the urine has spread, can in general be ascertained by the dusky redness of the integuments, which is always present, and which sometimes makes its appearance in a very few minutes after the extravasation has taken place into the subjacent cellular texture. The history and peculiar character of this disease are in general so obviously and unequivocally marked, as seldom to render its recognition difficult. I have met with two cases, however, in which it was mistaken for other diseases by well-informed surgeons; and, in one of these, the neglect of the proper treatment proved fatal.

Case II. *Urinary Abscess and Extravasation mistaken for Erysipelas: Death.*

I was requested by a surgeon in town to visit an old soldier, who had long laboured under stricture of the urethra. Eight days previously, a small painful tumor began to form in the perinæum, which gradually increased; and was followed, in four days, by a sudden swelling of the scrotum and penis, which extended rapidly to the groins, upper part of the thighs, and abdomen, and was speedily productive of redness of the integuments; which in a few hours assumed a violet colour. The urine continuing to dribble from the penis, it was supposed that the disease was erysipelas, and that the external swelling had no connexion with the urethra. I made several free incisions into the affected parts, which were gangrenous, and gave exit to a large quantity of fetid urine mixed with pus. Through one of these openings, in the situation of the original tumor in the perinæum, I succeeded in passing an elastic catheter into the bladder, and drawing off two pounds of urine. From the extent of the extravasation, the dissipated habits of the patient, who was a dram-drinker, and had been long in a warm climate, and the great typhoid depression which existed, but little benefit followed this treatment. He did not survive more than twelve hours.

On dissection, besides the great destruction of the cellular texture and integuments externally, it was found that the urine was extensively extravasated into the cellular substance of the pelvis, having passed along the crura of the penis, and under the symphisis pubis, so as to form a communication with the sloughy cavity on the surface of the abdominal muscles.

Should the usual symptoms of inflammatory fever have attended the formation and advancement of the tumor in the perinæum, we find that these change their type, and become distinctly typhoid, so soon as the urine has begun to spread into the adjoining cellular substance. I have also observed, that these in their turn disappear, the countenance losing its sunk and haggard appearance, the tongue its red edges and furred surface, the pulse its irritable and wiry beat, and the skin its coldness, whenever the further extravasation of urine is prevented by a free incision into the perinæum, and the cellular texture is unloaded by numerous scarifications.

COLLECTANEA.

Floriferis ut apes in saltibus omnia libant,
Omnia nos, itidem, depascimur aurea dicta.

PHYSIOLOGY.

Case of Anencephalism. A POOR woman, aged thirty, mother of two children, was delivered of a third in April, 1830; it was male and anencephalic, and yet it lived for thirty-two hours. Since that period, the woman had dreaded being again pregnant, as "she was certain (she said) that she should bear nothing but monsters." On 4th July of next year, she was delivered of a female child; and this also was anencephalic. It lived for twenty hours. The respirations were feeble and distressing, and, soon after birth, the face and body became of a blue colour, which deepened more and more to a blackish hue. Its size was that of a full-grown and healthy child. The shape of the head was most extraordinary; the level of its vertex was on a line with the root of the nose, its dimensions were much contracted, as well from side to side as from before backwards; the face was fully formed, but the forehead and eye-brows were wanting; the eyes were startingly projecting, in consequence of the deficiency of the upper part of their orbit, and were situated at the most elevated points of the head; the inclination of the face was sloping backwards, so that the facial angle was much smaller than usual. On a careful examination after death, the whole of the vault of the skull was found wanting, and the open cavity was bounded by a rim formed by the frontal, parietal, and occipital bones; the basis of the cranium was much contracted in size in all its dimensions; the posterior wall was inclined forwards, so that the os occipitis appeared to rise vertically, in a line with the margin of the foramen magnum, and hence there were, in reality, no occipital fossæ; the anterior fossæ were scarcely distinguishable; there was no trace of the cribriform plate of the ethmoid bone; the os frontis consisted of two small pieces, joined to each other in the median line; and each piece consisted of two laminæ, one of which represented the orbital plate, the other the globular portion; the foramen opticum of the sphenoid was wanting; the petrous process of the temporal was fully formed, while the squamous plate was very imperfect; the parietal bones, in shape and appearance, were like a narrow band or rim along the upper edge of the temporal bones; the basilar process was placed vertically. All the vertebræ were perfect. The scalp was covered with long hair, and extended somewhat beyond the bony margin of the cranium, and then became suddenly continuous with a red-coloured thin membrane, which supplied the place of the vertex; it adhered to the subjacent parts, and had much the appearance of a cicatrix. On dissecting this off, a soft tumor, of the size of a walnut, and of a fibro-cellular tissue, without any trace of cerebral substance, was found to occupy the central part of the cranium; it adhered strongly to the dura mater in all directions: the cerebrum, cerebellum, and tuber annulare were quite deficient; the upper end of the medulla oblongata was to be seen, and it presented the appearance of having been cut from the tuber; it had no connexion with the fibrous substance described above. The spinal marrow was also quite normal. There was no trace of the optic and olfactory nerves in the cranium: in the orbit, the former was found, but very small, flattened, and reduced to an empty neurilema; posteriorly it was lost in the dura mater; the eyes were large, and the retina perfectly developed. There was no trace of any of the cerebral nerves within the cranium, except of the trigemini, which appeared to proceed from a plexiform ganglion, situated in the fibrous mass; and, as this substance was infiltrated with blood, the nerves were with difficulty traced. The facial and auditory nerves were not attached to the medulla oblongata, but lay loose and unattached in the cavity of the cranium; on the outside of the cranium they seemed quite healthy; the auditory organs were fully formed. The spinal nerves were all normal in structure and arrangement. The carotid arteries were very small, and terminated in the fibrous mass; the vertebral were shrivelled to mere threads. Lungs nearly healthy; the ductus arteriosus and the foramen ovale were quite open. The abdominal viscera were perfect; meconium was found in the large intestines.—*Med. Chir. Journal.*

PATHOLOGY.

Cases of Dropsy and Gangrene occurring in a Family who had subsisted for some time on unwholesome Potatoes; with Remarks. By ALEXANDER PEDDIE, Esq. Surgical Hospital.

CASE I. On the 13th December 1832, I was requested to visit Mary Clapperton, ætat. nineteen months, at the Causewayside, as an out-door patient of the Edinburgh Surgical Hospital. On her left cheek, half way between the mouth and angle of the jaw, there was a portion of integument of the size of a half-crown piece, dark, pulpy, and exhaling a fetid smell. Over the cheek and the greater part of the anterior surface of the neck the parts were much swelled, very hard, and of a deep red colour; some parts, especially in the immediate vicinity of the sore, having a yellowish tinge, and others a bluish black appearance. The child had a dull listless aspect, a loaded tongue, and a quick feeble pulse.

The parents stated, that a few weeks before, she had had a mild attack of scarlet fever, the rash of which extended merely over the chest, and receded in the course of a day. A small hard swelling then appeared a little below the present sphacelated part, and after some blood was abstracted from it by leeching, the appearances just described were gradually displayed. On questioning the parents as to the kind of food used by the patient, they assured me that it was perfectly wholesome.

I immediately removed the mortified part, and found a considerable cavity underneath, and the integuments undermined in every direction, apparently extending nearly to the limits of the external appearances already described. The Unguentum Resinosum with an equal part of the Olèum Terebinthinæ, covered by a poultice, was applied to the sore; and this dressing was removed four times a day. I directed also that a purgative should be taken immediately, and that the child's strength should be supported by a liberal allowance of wine. In consequence of the above dressings to the sore, the application of the Tinctura Saponis c. Opio to the surrounding parts, and the exhibition of wine, of which about one gill was taken daily, in a few days the greater bulk of the swelling had diminished, the parts assumed a healthy colour, the ulcer showed a good healing surface, and the patient appeared lively. The wine was now withdrawn; sago provided as diet; and a lotion of the sulphate of zinc, with a compress and bandage, applied to the parts. Under this treatment the ulcer was completely cicatrized by the 12th January, and the patient was perfectly healthy.

Case II. Alexander Clapperton, ætat. six, was also seen by me on the 13th December. I found him sitting by the fire propped up with pillows; his face pale and bloodless, much swollen, particularly about the eyelids, and having a dull languid expression. His abdomen was tumid, the inferior extremities œdematous and hot on the surface, although the patient was exquisitely sensible to impressions of cold. His breathing was soft but hurried, and at times interrupted; and on auscultation the respiratory sound was much less distinct than usual. His pulse was small and rapid; tongue pale; breath fetid; urine scanty and high-coloured; and his stools dark and offensive. On inquiry I found that he had been complaining much for ten days, during the few last of which he had been unable to lie in bed; and that about six weeks previously he had had an attack of scarlatina, in which the rash had been perfect, and his recovery easy. I desired him to have some purgative medicine immediately, and then pills containing calomel and squills, one to be taken every seven or eight hours.

14th. Rather worse. Breathing more laborious; fluctuation perceptible in the abdomen; and the œdema of the inferior extremities so great as to render the integuments tense and shining. Frictions with the tartrate of antimony ointment to be employed over the abdomen and chest, the calomel and squills to be continued, and to have a solution of the supertartrate of potass for drink.

15th. There is no improvement. Prescriptions continued.

16th. Worse in every respect. Suffocation frequently threatened. Pulse excessively quick, and extinguishable on the slightest pressure. To have wine occasionally, and two grains of the sulphate of quinine repeated twice in the day.

17th. Died.

On inspection of the body two days after death, the following appearances were observed. Great bloodlessness of the whole body. Strong general adhesions in the chest. The right lung displaced, and much compressed, by about two pounds and a half of clear fluid. The lung itself more fleshy than natural, and on the tip of its superior lobe a considerable deposition of lymph, in the form of a yellow transparent jelly. The left lung more natural in appearance. The mucous membrane of the trachea and larger bronchia thickened, softened, and extremely vascular. The cellular substance of the anterior or mediastinum very much infiltrated with serum. A small quantity of serum in the pericardium. The heart pale, and containing in both ventricles large polypi. The abdomen exhibited evident marks of inflammatory action, with dropsical effusion to a considerable extent.

Case III. Agnes Clapperton, ætat. four, began to complain on the 17th December, the day of her brother's death. At first, the symptoms were languor, loss of appetite, costive bowels, tumid abdomen, œdematous legs, and scanty urine. In a few days these were succeeded by pyrexia, and afterwards by nearly the same dropsical appearances as have been described in the case of her brother, and also by the same termination on the 29th December. The treatment was somewhat different from that pursued in the former case. As the disease was seen from its commencement, bleeding and cathartics were resorted to on the first manifestation of febrile symptoms, and succeeded by the use of calomel and squills, the supertartrate of potass, a blister, and in the last stage, wine and the sulphate of quinine.

On dissection thirty hours after death, the appearances were these. In the thorax considerable adhesions; about twelve ounces of serum effused into the right side, and eight ounces into the left; great hepatization (the red hardening of Andral) of both lungs; the mucous membrane of the air-vessels very vascular; and the heart extremely pale, and containing in its right auricle a large polypus. In the abdomen, a very considerable quantity of fluid effused; the liver much enlarged; a large polypus in the vena hepatica; the gall-bladder very œdematous, there being nearly a quarter of an inch in distance between its coats; the covering of the kidneys thickened, but they themselves natural, with the exception of a very slightly speckled appearance externally, and being rather softer than usual internally; portions of the intestines very vascular, particularly near the termination of the ileum, where also there were several tubercles, and a slight ulceration; the mesenteric glands, especially in this neighbourhood, most extensively diseased, being of various sizes, from that of a pea to a walnut, some of them solid, others containing a fluid resembling light-coloured pus; and the glands of Peyer in many parts very large and excavated.

In perusing these cases, the reader may be inclined to think that the dropsies and the gangrenous sore may naturally be explained by a previous attack of scarlatina. In this way I accounted for the first two cases. But on learning from the parents of Agnes Clapperton that she had not had the slightest symptom of scarlet fever while Mary and Alexander had it, I was compelled to seek for another cause to resolve the mystery. For a week after A. C. was taken ill I could obtain no satisfaction. Although I could perceive that the family were in a state of extreme destitution, that every member of it had a most unhealthy aspect, yet my inquiries as to bad food were always met with an assurance that they had been living on nothing but what was perfectly wholesome. A neighbour of the family, to whom I next applied for information, hinted the probability of bad potatoes being the cause of the evil, as she knew for certain that the Clappertons had lately been subsisting almost entirely on such. I now renewed my efforts to ascertain the truth, and having directly charged the parents of the family with the use of this unwholesome diet, I obtained the following confession, apparently at much expense of feeling.

That for some time past the father had been out of employment, in consequence of which his family were left perfectly destitute; and, having too much pride to beg, and seeing starvation before them, they went to the fields, and gathered those potatoes which are exposed on the surface of the ground, and which are uniformly rejected by the farmer as utterly unfit for human use. That the potatoes in question were frosted,* were watery in consistence, some of them of a green, and others of a deep purple colour, and all of them having an excessively bitter taste. That in gathering these potatoes from the field, they often met with people similarly employed, but did not think that any of them did so for the purpose of human food, but were merely obtaining them for pigs; indeed, they had never heard of any one eating such potatoes. That this had been their aliment for upwards of six weeks previous to the beginning of December 1832, and that they had perhaps only a single meal of another kind once in eight days. That the potatoes had such a disagreeable taste as to be loathed, notwithstanding all the modes of preparation which their ingenuity could devise for rendering them more palatable. That in a very few days after using them, the whole family were seized with severe griping pains in the bowels, followed by diarrhœa of a green watery kind. That these bad effects continued with short intervals during the whole time that the potatoes were used, but that the children had not experienced them so severely or so constantly as the parents, which circumstance was accounted for by their occasionally getting a crust of bread from some of the neighbours.

To what extent the unwholesome food just described may have concurred with scarlatina in producing the effects detailed in Cases

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* These potatoes, it may be necessary to explain, lie on the surface of the ground, and are exposed to the influence of the sun through the day, and to frost during night. Some conceive that frost effects a chemical change in the constituents of the potatoe-root, by converting its mucilage into sugar, from which acetic acid is speedily formed, and putrefaction induced. Others, again, consider that the watery part of the potatoe is converted into ice, which, occupying a larger space, separates the solid parts farther from each other, and produces, in consequence, a partial mechanical disorganization of structure.

I. and II. I am not prepared to say; but that a noxious influence must necessarily have been exerted by it on the constitutions of the patients, and consequently have disposed their systems to diseased action, particularly to that of dropsical effusion, I think is very obvious.

In the case of Agnes Clapperton, however, it seems exceedingly probable that the bad potatoes were the sole exciting cause of dropsy. Being aware that a dropsical tendency is often shown after very slight attacks of scarlatina, my inquiries in this case were repeated and strict; but I was uniformly and positively assured that, although A. C. laboured under slight diarrhœa in consequence of the potatoe diet still in use, while her brother and sister had the scarlet fever, she had neither sore throat, nor rash, nor any thing which could in the smallest degree indicate the existence of that disease in her person. The parents too could scarcely be deceived if any symptom of the fever had been present, having so simple and decisive a test to guide them, as comparison with the appearances exhibited by the other two children.

What gives additional strength to this opinion is the fact, that the same effect has often been produced by the same cause, namely, dropsy from frozen surface potatoes, in the case of horses and cattle. I have examined several individuals connected with farms in different districts of the country, and they all agree that feeding cattle or horses even for a very short time on such potatoes, unless plenty of *fodder* was given along with them, would inevitably generate dropsical effusion. In some districts, to avoid the dreaded evil, the cattle, being principally of the milch kind, are never allowed such food; the horses only get it in sparing quantities; but the swine, which are supposed incapable of being injured by vegetable productions, however rank and corrupt, are permitted them in an unrestricted abundance.

A Banffshire informant states, that in his part of the country cases of dropsy among the cattle in particular are very frequent, owing to the use of these potatoes, without a sufficient accompanying proportion of other food. He represents the deleterious influence of them on the animal to be shown, first, by the presence of griping, evinced by tossings of the head, movements of the legs, especially the hind ones, and rolling on the ground; secondly, by severe frothy purging; then by difficult respiration; and lastly, by serous effusion, which proves speedily fatal, if strong purgatives, diuretics, and the last resource, namely tapping, are not successful.

Striking points of analogy cannot fail to be observed between the facts mentioned in the above statement and those in the case of Agnes Clapperton. Previous to the dropsy, she had the griping and purging to a considerable extent, but certainly not by any means so severe as her father and mother; a circumstance which may perhaps explain the cause of their immunity from dropsical effusion; for it does not seem an unlikely supposition, that, had nature made the same efforts in her case to throw off the poisonous matter, she too might have escaped the fatal disease.

I may here mention, however, that her father had a most unhealthy, feeble appearance, and her mother looked even worse, had various complaints, and among the rest an abortion of a fourth months' pregnancy, all which ailments were not improperly attributable to her late unwholesome mode of living.

With regard to the manner in which the potatoes had acted in generating dropsy, and the appearances exhibited by dissection, I will not pretend to give a decided opinion.

Indigestible substances taken into the stomach, and improper modes of living, have by several authors been admitted as the cause of dropsies. Venables, in his Clinical Reports, p. 14, considers such causes as undeniable, and states a case of dropsy occurring from the use of fat bacon and cheese. Dr. Ayre, and several other authors, give cases both of hydrothorax, ascites, and anasarca, occurring separately, and in conjunction, from indulgence in what are called the pleasures of the table, and the immoderate use of fermenting liquors. In such cases as these, the disease must have originated in consequence of general debility, produced by the imperfect assimilation and conversion of aliment into chyle; by the scanty proportion of nourishing matter taken into the blood; and by the enfeebled condition of the whole vascular system from the existence of long-continued gastro-intestinal irritation. Now, though the unwholesome potatoes so often referred to might not give rise to dropsy, by any specific operation, they must have affected the system in the way that other indigestible substances would do.

The mass of disease found in the mesenteric glands of Agnes Clapperton may throw some light on the pathology of her case. It is well known that bad food is one of the great causes of such degenerations; and in her case, where the structure of the glands was so much diseased, it was impossible that the fluids could circulate freely; and perhaps the fluid resembling pus observed in so great quantity in some of the glands was in reality obstructed chyle. Dr. Ayre, p. 8, states a case of ascites proceeding from mesenteric disease, and remarks, that inflammatory action is propagated from the glands to the serous membrane investing them; "whence, as from a point, it gradually spreads along the membranous duplicature of the cavity." In the case of Agnes Clapperton, a similar diffusion of inflammatory action may have taken place.—*Edinburgh Med. and Surg. Journal.*

MISCELLANEOUS.

Caspar Hauser. An Account of an Individual kept in a Dungeon, separated from all Communication with the World from early Childhood to about the Age of Seventeen. Drawn up from Legal Documents. By Anselm von Feuerbach, President of one of the Bavarian Courts of Appeal. Translated from the German.

Many of our readers doubtless recollect to have seen, in the papers of the day, an account of an individual who it was represented had been found in Nuremberg, in a condition which left his previous life enveloped in the greatest mystery. This individual is the subject of the present short but extraordinary narrative, which may be truly termed a romance of real life. To the physiologist and metaphysician it is a most invaluable record, as shedding a new and most unforeseen light on some of the most intricate questions connected with the development of the human mind.

We shall not attempt to follow the history of this unfortunate being, except as connected with circumstances which fairly come within the design of a medical work. All that may be necessary to state at present is, that when Hauser was found, he appeared to be about sixteen or seventeen years of age, had never learned to speak, and that in all probability he had been shut out during his whole life from all communication with the world, in a narrow dark dungeon, in which he was always obliged to remain in a sitting posture, that his food had invariably been bread and water; in fact, that he had enjoyed a mere animal existence.

"Light had never shone upon this being, either on his eye or on his soul; and when he emerged from his lonesome darkness, he was like a new-born child in respect to all which must be acquired by experience, whilst the instruments for acquiring that experience, the natural faculties, of course differed from those of a child so far as they were affected by the mere age or growth of the individual."

His physical appearance when he appeared at Nuremberg is thus detailed. He was four feet nine inches in height, and about sixteen to seventeen years old. His chin and lips were very thinly covered with down; the dentes sapientiæ were wanting. His skin was fine and very fair; his limbs were delicate, and his feet showed no marks of having ever been confined by a shoe. His face was almost without expression, except that of a brutish obtuseness. He scarcely knew how to use his hands or fingers. His gait was like the first attempts of an infant to walk.

A medical examination was ordered to be made, the results of which, as stated by Dr. Osterhausen, in his report, present some curious anatomical detail. The patella, instead of forming a prominence, lay in a hollow. The tendons of the two vasti muscles were separately inserted into the tibia. From this peculiar formation when Hauser sat down, with his leg and thigh extended horizontally on the floor, his body formed a right angle with the thigh, and the knee-joint was applied so closely to the floor as to prevent the passage of even a card beneath it.

He constantly evinced the strongest aversion to all kinds of meat and drink; and would only partake of bread and water. Even the smell of other food affected him disagreeably. The ingestion of the smallest quantity of wine, or coffee, occasioned him cold sweats and vomiting; even milk disordered his stomach. He was in possession of but two words with which he used to designate living beings; whatever appeared in the human form he called "bua," and to every animal he gave the name of "ross," (horse.) When first found, not only his mind, but most of his senses were in a state of torpor, but his nervous excitability was soon developed in an extraordinary degree; thus, the beating of a double drum near him threw him into convulsions. Not a spark of any religious belief was to be discerned in him.

The account which he gave of himself was as follows:

"He neither knows who he is nor where his home is. It was at Nuremberg that he first learnt that, besides himself and 'the man with whom he had always been,' there existed other men and creatures. As long as he can recollect, he had always lived in a hole, (a small low apartment, which he sometimes called a cage,) where he had always sat on the ground with bare feet, and clothed only with a shirt and pair of breeches. In his apartment he never heard a sound, whether produced by man, by an animal, or by any thing else. He never saw the heavens, nor did there ever appear a brightening (daylight) as at Nuremberg. Whenever he awoke from sleep he found a loaf of bread and a pitcher of water by him. Sometimes this water had a bad taste; whenever this was the case he could no longer keep his eyes open, but was compelled to fall asleep; and when afterwards he awoke, he found he had a clean shirt on, and that his nails had been cut. He never saw the face of the man who brought him his meat and drink. How long he continued to live in this situation he knew not."

It appears from his imperfect narrative, that his keeper once came behind him, so as not to be seen, and guided his hand so as to make it write something, and soon afterwards placed him on his feet, and attempted to teach him to walk, and finally, that the man carried him out from his prison on his back; of his journey Hauser knew but little, except that he fainted several times during it.

The state of his mind during his confinement, as far as could be ascertained, must have "been that of a human being immersed in his infancy in a profound sleep, in which he was not conscious even of a dream." In this condition he remained till he suddenly awoke, as it were, by the forcible impressions of external objects on his senses. He has no recollection of having ridden on his journey, though, from the deep sleep which riding always produces on him, this may have taken place. When he is asleep, noises appear to have no influence on him, and even rough treatment does not awaken him.

When first found, his saliva was as viscous as glue, but this afterwards became natural, on a change of food. He betrayed a great aversion to any glare of light, and his eyes were much inflamed. He was subject to spasmodic contractions on the left side of his body, especially when excited by any new object; or, when his mind was deeply engaged, these spasms were succeeded by a state of nervous rigidity. With regard to colours, Hauser always preferred the most glaring. At first he had no idea of size or distance; thus, when directed to look out of a window, he instantly drew back with repugnance; this he afterwards explained, by saying that it appeared as if the objects were close to his eyes. Drawings or paintings appeared to him as much relieved as if carved in wood.

It appears from a subsequent report of his medical attendant, that the multifarious impressions made upon his mind were too powerful, and produced a high state of nervous excitability.

"The muscles of his face were affected with frequent spasms. His hands trembled so much, that he was scarcely able to hold any thing. His eyes were inflamed, they could not bear the light. His hearing was so very sensible, that all loud speaking caused him violent pain."

He lost his appetite, and his gastric functions became disordered.

He was then removed to a quiet house, and no one permitted to see him. Here he for the first time slept in a bed, and began to dream. One of the most difficult undertakings was to accustom him to the use of ordinary food; this was a work of months; and it is a curious fact, that before he became accustomed to warm food, he was tormented with a constant thirst, drinking daily from ten to twelve quarts of water. After he became habituated to meat, his mental activity was diminished, his eyes lost their brilliancy and expression, and, in short, his state of morbid excitement gradually disappeared. This change of diet had also a remarkable effect on the development of his body, as he gained two inches in height in a very few weeks.

It would be impossible for us to detail the various mental phenomena that the gradual development of his faculties occasioned; we may, however, mention a few of the most striking, as exemplifying how slowly the mind acquires habits of just comparison. Thus, it was a long time before he could comprehend the difference between animate and inanimate objects, and he conceived that every motion which took place in any object was spontaneous; thus, if a sheet was blown down by the wind, he thought that it had run away. He supposed that a tree manifested its life by moving its branches and leaves, and that the rustling of the latter, when agitated by the wind, was the voice of the vegetable. To animals he for a long time ascribed the same as to men, and appeared to distinguish the one from the other only by the difference of their external form.

As to his sight, it was very peculiar, as he could see in the dark as perfectly as in the light; this was proved by numerous experiments: thus, in a perfectly dark night, he could distinguish blue from green, &c. His sight was also extremely acute, both as to distance and nicety. His hearing was as remarkable. But of all his senses, that which was the most troublesome to him, and which rendered his life miserable, was that of smell. What to all other persons was entirely senseless, was not so to him. The odour of a rose overcame him; in fact, every smell except those of bread, fennel, anise and carraway, were more or less disagreeable to him. He could distinguish fruit trees from each other at a considerable distance by the smell of their leaves. The odour of old cheese made him feel unwell, and caused vomiting. What are considered by most persons as unpleasant smells, were much less offensive to him than what we consider as agreeable perfumes.

There is a fact connected with this acuteness of smell, which settles the question of the emanations from burial-grounds; when he walked near a churchyard, the smell from it, which was not perceptible to any one else, occasioned him a complete paroxysm of fever.

One of the most extraordinary peculiarities of Hauser's temperament was his susceptibility to magnetic and metallic excitements. A toy was given him furnished with a magnet; this he would not use, as he complained it occasioned him unpleasant sensations. On learning this fact, Professor Daumer made some experiments on him with a magnet. When the north pole was presented to him, he complained of pain in his stomach, and that a current of air appeared to flow from him towards the magnet; the south pole had less effect on him. These experiments were varied as much as possible, but he was never deceived. In respect to his sensibility of the presence of metals, and his ability to distinguish them by his feelings, many instances are adduced. He described his sensations of the contact of metals, as a feeling of drawing or attraction, which passed over him, accompanied at the same time with a chill, which ascended, according as the objects were different, more or less up the arm. This sensibility he gradually lost. When he caught a cat by the tail, he was seized with a strong fit of shivering, and felt as if he had received a blow upon the hand.

His present state is thus described.

"His mode of life is that which is common to most men. With the exception of pork, he eats all kinds of meat, if not seasoned with hot spices. His favourite condiments still are carraway, fennel, and coriander. His drink continues to be water, and only in the morning he takes a cup of unspiced chocolate instead of it. All fermented liquors, beer and wine, as also tea and coffee, are still an abomination to him; and, if a few drops of them were forced upon him, they would infallibly make him sick.

"The extraordinary, almost preternatural elevation of his senses, has also been diminished, and has almost sunk to the common level. He is indeed still able to see in the dark; so that, in respect to him, there exists no real night, but only twilight; but he is no longer able to read in the dark, nor to recognise the most minute objects in the dark at a great distance; whereas he was formerly able to see much better and more distinctly in a dark night than by daylight: the contrary is now the case. Like other men, he is now able to bear and he loves the light of the sun, which no longer distresses his eyes. Of the gigantic powers of his memory and other astonishing qualities, not a trace remains. He no longer retains any thing that is extraordinary, except his wonderful fate, and the gentleness of his disposition."

In the above abstract we feel that we have not given as connected a view of the operations of Hauser's feelings and mental faculties as they were gradually acted on, and developed by the action of external objects, as could have been wished; this however our limits prevented, and we must therefore refer such of our readers as wish for more information, to the work itself, which will amply repay an attentive perusal.—*American Journal of Med. Sciences.*

MATERIA MEDICA.

Influence of Vinegar in lessening the Urinary Secretion. Mr. John Dalton, in a course of experiments for comparing the quantity of food taken with that of the different secretions, found on one day a great defalcation in the amount of urine which he passed, and for which he could discover no cause, unless his having taken at dinner-time a teaspoonful or two of vinegar, could account for it. To be satisfied of this, he took, some days after, an ounce of vinegar in four equal portions during one day; and the effect was a very great diminution of urine on that day, amounting to fifteen ounces less than the average quantity, (48½ oz.) Mr. D. says that there did not appear to be any increased effect in any other secretion, as a compensation for this diminution.—*Memoirs of the Lit. and Philosophical Society of Manchester, Vol. V., N.S.* 1831.

INTELLIGENCE.

Malignant Cholera. Several cases of cholera, with all the characters of the formidable epidemic of last year, have recently occurred in London. As yet, however, it does not appear that the disease has any strong disposition to spread. A few cases have happened at Limehouse, where diarrhœa and dysentery are prevalent. Some cases have also ended fatally at Sunderland.

The streets of Bristol were a few days ago swarming with small black flies, in such immense numbers as in some degree to darken the atmosphere. The return of the cholera has, we regret to say, occurred at Bristol. The presence of myriads of black flies, and the prevalence of cholera, were occasionally noticed last year during the progress of the disease.

The Concours at Paris. The contest for the chair of *clinique interne* has at length closed, and M. ROSTAN has been appointed. There are many persons in this country who are extremely anxious that a *concours* should be established, as the best mode of determining the professional capabilities of candidates for medical offices in public institutions. If ever such a mode of examination should be adopted here, we trust it may be better managed than in Paris; where, during the election just terminated, as much confusion has been witnessed, and as much personal vituperation bandied about, as the most turbulent could desire. As a proof of the very great dissatisfaction that was felt, very strong protests and reclamations were presented to government against the issue of the last contest, when a new *concours* was opened at Paris for the chair of *pathologie externe* in the Faculty.

College of Surgeons. Mr. GUTHRIE has been elected president, and Messrs. WHITE and ANDREWS vice-presidents, for the ensuing year.

Recognition of French Certificates at the Navy Board. Sir WILLIAM BURNETT last week told a medical gentleman, who was on the eve of preparing for examination at the Navy Board, that, as there was great hindrance to the prosecution of anatomy at present in London, (from the want of subjects,) that he had better go to Paris to dissect; and that, if he did so, he (Sir William) would, on the return of the student to London, receive his French certificates at the Board.—*Lancet*, July 27.

MONTHLY LIST OF MEDICAL BOOKS.

[*Medical Works cannot be entered on this List unless a copy be sent for the purpose, the titles of Books having frequently been sent to us as published, which have not appeared for weeks, or even months, after.*]

The Teeth, in relation to Beauty, Voice, and Health; being the Result of Twenty Years' practical Experience and assiduous Study to produce the full Development and perfect Regularity of those essential Organs. By JOHN NICHOLLS, Surgeon-Dentist.—Large 8vo. pp. 134. Hamilton and Co., London.

An Essay on Inflammation; being an Inquiry into the Causes, Phenomena, Treatment, and Terminations of this Condition, with a View to the Elucidation of the Proximate Cause. By PHILIP LOVELL PHILLIPS, M.D. Oxon.—8vo. pp. 153. Burgess and Hill, London.

Part XXI. The Principles and Practice of Obstetric Medicine, in a Series of Systematic Dissertations on Midwifery and on the Diseases of Women and Children. Illustrated by numerous Plates. By D. D. DAVIS, M.D. M.R.S.L., &c.—4to. John Taylor, London.

Letters on the Cholera Asphyxia, as it has appeared in the City of New York: addressed to JOHN C. WARREN, M.D., of Boston, and originally published in that city. Together with other Letters, not before published. By MARTYN PAINE, M.D.—8vo. pp. 160. Collins and Hanway, New York.

A Treatise on the Composition and Medical Properties of the Mineral Waters of Buxton, Matlock, Tunbridge Wells, Harrogate, Bath, Bristol, Cheltenham, Leamington, Malvern, Isle of Wight, Brighton, and the Beulah Spa, Norwood. With instructive Observations on the Drinking of the Waters, and the use of the several Baths. By Sir CHARLES SCUDAMORE, M.D. F.R.S. &c. Second Edition, corrected and much enlarged.—8vo. pp. 215. Longman and Co., London.

APOTHECARIES' HALL.

NAMES OF GENTLEMEN to each of whom the Court of Examiners have granted Certificates:

JULY 4.
George Archer, Mildenhall
Nathaniel Collyer, Gislingham
John Say Clarke, Lincolnshire
Wm. Neyle Cornish, Devonshire
Luther Owen Fox, Broughton
John Gayleard
Samuel Price Prichard, Shrewsbury
Gerald O'Reilly.

JULY 11.
John Moore Bates
William Bainbridge, York
Maurice Dyte, London
Thomas Fentem, Eyam, Derbyshire
Hamilton Mason, Bishopwearmouth
Hildebrand Phipos, Hackney Road
William John Tubbs, Clenchwater
George Montague Scott Seaward, Clapham
Francis Robert Smith Upjohn, Field Dalling
Charles Wordingham, Norfolk.

JULY 18.
John Greeves, Aldersgate street
John Thomas Morris, Jersey
John James Ridge, Bridge Road, Lambeth
Richard Thomas Russell, Tonbridge, Kent
Wm. Samuel Slinn, Whittlesea, Camb.

JULY 25.
Thomas Brent, Bratton, Wilts.
Benjamin Dodsworth, Wheldrake, York.
Robert Gibbon, Wateringbury
Thomas Long, Portsmouth.

METEOROLOGICAL REGISTER,

By Messrs. HARRIS and Co., Mathematical Instrument Makers, 50, High Holborn.

	Moon.	Rain gauge.	Thermometer			Barometer.		De Luc's Hygrometer.		Winds.		Atmospheric Variation.		
June			9 a.m.	max.	min.	9 a.m.	10 p.m.	9 a.m.	10 p.m.	9 a.m.	10 p.m.	9 a.m.	2 p.m.	10 p.m.
20		.02	62	70	55	29.68	29.72	64	61	NW	NNW	cloudy	fine	fine
21			66	72	60	.80	.68	60	59	NNW	WSW	fine	fine	cloudy
22			65	69	58	.74	.60	59	58	NNW	NW			rain
23			62	67	46	.36	.38	59	62	WSW	WNW	showery	rain	fine
24	☽		69	65	50	.42	.56	60	64	W	W	cloudy		
25		.78	61	66	54	.66	.60	62	63	WSW	N	fine	fine	
26			62	68	56	.52	.42	63	66	E	S	cloudy		
27			62	66	58	.45	.67	65	64	WNW	SW			cloudy
28			66	75	62	.59	.51	64	61	SSW	WSW	fine		fine
29			68	69	55	.55	.62	59	57	WSW	WSW	cloudy		
30			63	70	58	.68	.63	57	57	WSW	SW	fine		
July 1			64	65	49	.58	.60	58	61	WSW	WNW			
2	○	.45	60	66	52	.68	.73	60	60	WNW	WNW	overcast	fine	cloudy
3			62	67	52	76	.87	60	61	WNW	NW	cloudy		fine
4			63	70	57	.92	.92	61	62	W	SW	fine		
5			65	70	56	.91	.77	62	60	WSW	SE	cloudy		
6			67	73	57	.60	.44	60	55	SE	E	fine		
7			63	67	59	.47	.53	59	64	SW	W	cloudy	rain	cloudy
8			60	68	56	.59	.75	66	68	WNW	ENE	rain	cloudy	fine
9		.55	62	69	59	.85	.83	69	50	NE	NNE	fine	fine	
10	☾		65	71	55	.77	.73	54	64	NNE	NNE			
11			64	71	57	.67	.65	64	65	N	N			cloudy
12			60	64	55	.59	.62	65	65	SE	NE	cloudy	cloudy	
13			58	63	54	.67	.76	65	65	NNE	NNE			fine
14			62	67	57	.70	.70	65	65	SW	SW			
15			64	70	58	.76	.87	65	63	E	SE		fine	
16			66	72	61	.96	.95	62	61	E	SSE	fine		cloudy
17	●		67	79	67	.97	.96	61	61	SW	NE			
18			71	78	64	.90	.80	61	59	WNW	NW			overcast
19		.45	69	73	62	.63	.51	59	61	W	WSW	cloudy		fine

The quantity of Rain fallen in June, was 1 inch and 48-100ths.

THE LONDON
Medical and Physical Journal.

415, VOL. LXX.] SEPTEMBER 1833. [87, *New Series.*

ADDRESS.

THE Proprietors of the "LONDON MEDICAL AND PHYSICAL JOURNAL" having deemed it advisable to make an alteration in its size and time of appearance, think it necessary to state their reasons for the change.

When this Journal was first published, and for many years subsequently, the interval of a month between each publication was sufficiently short for the sober wishes of our medical ancestors. But, with the progress of time, new wants arose: it was found that the last blunder of a coroner, or the last squabble at a debating society, could not possibly *keep* for a month, and medical newspapers were devised, to supply this deficiency in our periodical literature. The desired object was attained; and the medical newsmonger, feasted with ever fresh intelligence, looks upon a monthly Journal with the same eye with which a London politician regards the slow Mercury or Flying Post, that satisfies the ruder taste of his rustic contemporaries. But the interval, so long to many readers, is far too short for the Editor, who, while correcting the last proof of one number, is already arranging his materials for the next. We are not desirous, therefore, to court popularity by subdividing our Journal into weekly sections, whose quadruple alliance might still form a faint imitation of our former selves. Again: the writers whose practical observations should constitute the great attraction of a work of this kind would be unwilling to entrust them to a Journal whose rapid phases would condemn their lucubrations to the destruction which, according to Southey, fugitive pamphlets both invite and deserve. We have therefore chosen the contrary alternative, and have determined that the "London Medical and Physical Journal" shall in future appear as a Quarterly Review.

It will be divided into two principal departments, namely, Reviews of English and Foreign works; and the Collectanea, or general receptacle for miscellaneous information. To these a third will occasionally, and we trust frequently, be added, namely, Original Communications; but as genius cannot be tasked, and those whose observations are most worthy of being recorded are often deficient in time or inclination to note them down, it may perhaps sometimes happen that this division may be wanting.

Our Reviews will be characterised by good temper and fairness; inclining, in doubtful cases, to mercy rather than rigid justice: yet we shall not think ourselves obliged to profess our profound respect for every careless compiler, nor shall we declare each mawkish treatise, as it drops stillborn from the press, to be an ornament to our shelves, and indispensable to the library of every medical student.

To the longer reviews of important works will be appended brief notices of those less interesting works which may not seem to demand a detailed analysis; so that the reader who looks into our pages as a mirror of current medical literature, will rarely indeed be disappointed, but will see the smaller, like the larger features, faithfully reflected.

The immense mass of practical information offered by our brother Journalists in France and Germany will be diligently analysed. Our pages will frequently be embellished by translations from these sources, which will be found under our Miscellaneous Department. Gräfe and Walther's Ophthalmological Journal, Siebold's Journal für die Geburtshelfer, (Journal for Accoucheurs,) and the well-known periodical conducted by Hufeland, will be among those to be regularly consulted.

In compiling our Collectanea, we shall aim at bringing together a large quantity of useful and readable matter, and, if we find a passage to our purpose in an old writer, we shall extract it with as little scruple as if it were in an essay just wet from the press; remembering the praise that was lavished on Oribasius of old for his diligence in studying the opinions of former physicians:

Εἶχε γὰρ οἷα μέλισσα σοφὸν νόον, ἄλλοθεν ἄλλα
Ἰητρῶν προτέρων ἄνθεα δρεψάμενος.

And now a word as to Medical Politics. We hold, with the Spartans, that in times of civil dissension it behoves every citizen to express his opinion, not shrinking from the fight, but, when necessary, taking his share of hard knocks with a good grace.

We profess, as is customary, impartiality. By this we do not mean, as is sometimes meant, that we have no opinions, but look upon right and wrong with equal indifference. We mean that, in the disputes which now agitate the medical republic, we shall regard a good argument with equal favour, whether it comes from the right or the left, believing, with Boyle, that though "testimony is like the shot of a long bow, which owes its efficacy to the force of the shooter, argument is like the shot of the cross-bow, equally forcible whether discharged by a giant or a dwarf." We shall not, therefore, in these professional skirmishes, adopt the rule of more earnest warfare, and judge the combatants by the colour of their uniform: green, blue, or brown, are alike to us. Nay, more; we shall sometimes avail ourselves of the privilege claimed from time immemorial by the umpires in matrimonial disputes, and adjudge both the contending parties to be in the wrong.

Two numbers of the Medical Quarterly Review will form a volume, which will be furnished with an ample and correct index of the matters contained in it.

The first Number will appear on the 1st of October, price five shillings; and the work will be punctually delivered to subscribers by the publisher, or any local bookseller, at 1*l.* per annum. As very few copies will be printed more than are subscribed for, it is desirable the names of subscribers should be forwarded without delay, either to their booksellers, or the publisher, J. Souter, 73, St. Paul's Church-yard.

☞ Advertisements and Bills will be charged as follows: Under six lines, 5*s.*; quarter of a page, 8*s.*; one-third, 10*s.* 6*d.*; half a page, 15*s.*; three-quarters of a page, 20*s.*; an entire page, 30*s.* Bills stitched in the Review, 30*s.*; and if above eight pages, 2*l.* 2*s.*

ORIGINAL PAPERS.

GONORRHŒA.

Case of Gonorrhœa, produced by swallowing Gonorrhœal Discharge. By Dr. TAZENTRE.

[WE will not take upon ourselves to determine the degree of credit which our readers may give to the inferences drawn from this extraordinary, and to us quite novel, case. The fidelity of the relator we can have no right to question; but we confess we are inclined to suspect that some deception was used, or that some more ordinary cause than that assigned produced the gonorrhœal symptoms in the female upon whom the disgusting *ruse* was practised. Upon these points, however, we leave our readers to form their own opinion. The following is a correct account of Dr. TAZENTRÈ's curious detail, from the *Archives Générales*, Juin 1833.]

IN the inaugural dissertation which he defended at the Faculty of Medicine at Paris, Dr. Tazentre laid down the following proposition: "Gonorrhœal matter taken into the stomach, and the *dose!* repeated for several days, may produce syphilitic inflammation of the urethra." This opinion was founded upon the following very remarkable fact, which we are assured is faithfully and exactly given.

M. N., fifty-five years of age, an old sailor of licentious habits, was married to a young woman of twenty. The matrimonial tie did not, however, confine him from drunkenness and debauchery. About three years after his marriage he suspected that his wife played him false, but he had no proof that his suspicions were well founded. Having contracted a very severe gonorrhœa from one of his mistresses, he was anxious to cohabit with his wife, with whom he had had no connexion for two or three months, in order that he might communicate the disease to her, and then accuse her of having infected him. By this stratagem he hoped to extract from her a confession of her frailty. But she had observed that he looked unwell, and appeared to be suffering for many days, and she consequently refused the marital privilege. Baffled in this attempt, he had recourse to another expedient: he gave her secretly, mixed in milk or orgeat, a quantity of the gonorrhœal discharge, which he collected in a glass. He played this disgusting trick for eight or ten days, when one morning his helpmate unexpectedly entered the room, and detected him in the act of mixing something white with the milk that she had left upon the table for her breakfast. She accused him of doing something wrong, and declared she would have the milk analysed by a chemist. Alarmed at her threat, he confessed his perfidy. The woman herself was very naturally apprehensive that injurious effects might arise from the sort of poison she had taken, and she communicated the whole story to her parents.

Dr. Tazentre was acquainted with the family, and he was consulted upon the occasion. As yet Madame N. complained of no pain in the genital organs, nor was any discharge or inflammation detected, upon an examination made by Dr. T. himself. As he could not anticipate what phenomena might result from this new mode of infection, he merely prescribed a light and temperate diet, and occasional warm baths. Four days afterwards the patient again applied to him, complaining of pains in the vagina. He again examined her, and found the parts tumid and painful; and around the urethra there was considerable inflammation. On the following days the pain, particularly in making water, became much more severe, and the discharge more abundant. She had, in fact, all the symptoms of virulent gonorrhœa. A small reddish-looking streak extended from the clitoris to the groin, the glands of which were painful.

As the nature of the case was no longer doubtful, an appropriate treatment was adopted, and in about a week mercury was given internally, as Dr. T. was convinced of the existence of constitutional disease. Under the influence of this treatment Madame N. soon perfectly recovered.

Having been entrusted with the secret of the family, Dr. Tazentre's assistance was asked for in the husband's case. He also recovered from his gonorrhœa in about three weeks. Dr. T. obtained from him a particular account of the whole circumstances of the above related facts. He confessed every thing without reserve, and said that he had been anxious to communicate gonorrhœa to his wife, without exciting her suspicions, in order to force her to a disclosure of her infidelity. He added, that he was sure of infecting her by the means he adopted; for that formerly, wishing to revenge himself upon some person against whom he had a grudge, he had given him syphilis complicated with gonorrhœa, by administering, in the manner above mentioned, gonorrhœal discharge; and that it was in the colonies, where such tricks he declared were occasionally resorted to, that he had learned this mode of poisoning.

Dr. T. remarks, that this curious and unique fact, if confirmed by others of a similar nature, would be important in medical jurisprudence. It proves, in his opinion, the specific properties of gonorrhœal matter; and completely overthrows the doctrine which teaches us to regard gonorrhœa as a local inflammatory disease, which is always to be cured by a local antiphlogistic treatment. If the gonorrhœal matter is but the product of simple inflammation of the mucous membrane lining the urethra, how could it produce the disease without being placed in immediate contact with the part? If it were simply irritating, and not possessing any specific property, how could it traverse the digestive organs without injury to them, and localize itself and exert its action upon the urethra alone? The above case shews that there is a very different but unknown kind of affinity between the discharge and the genital organs, which must be regarded as specific.

Practitioners whose theory is opposed to this view may object to the facts which have been stated. It may be said that Madame N. might have contracted gonorrhœa from the person with whom her husband suspected her of intriguing, or that she merely laboured under profuse leucorrhœa, which Dr. T. mistook for gonorrhœa. He did not overlook these objections in collecting information upon the case, and he was therefore doubly cautious in his inquiries. The account he gives he received from the parties themselves, and it cannot be supposed that they exaggerated the facts for the purpose of rendering themselves more culpable. The man with whom Madame N. had connexion (for the suspicions of her husband were well founded,) was not affected with gonorrhœa. Dr. T. had undeniable proof of this fact: from him, therefore, her disease could not have originated. It was equally impossible for her to be deceived as to the nature of the disease. The severe pain she suffered in making water; the seat of the inflammation; the abundant discharge, thick and whitish at first, and subsequently of a greenish colour; the obstinacy of the inflammation; the red cord running from the clitoris to the groin, the glands of which became painful, form a series of symptoms that could not be mistaken for leucorrhœa; to which, besides, Madame N. had never been subject. Lastly, Dr. T. was persuaded that secondary symptoms would have occurred if he had not adopted the proper and precautionary practice.

An interesting note is appended to the original paper, in which Dr. T. anticipates some objections that may be made to this case. He presumes that the absorbing power of the mucous surfaces will not be denied; but it may be replied, that, in the above case, absorption must have taken place in the stomach, and that experiments upon morbid poisons appear to prove that their action is neutralised by the action of the stomach. Proofs are yet wanting, however, to establish this position. Fontana made many experiments upon the poison of certain animals, particularly upon that of the viper: he has shewn that the venom of this reptile, taken into the stomach, produces no sensible effects, and that, when applied to the eye, it merely caused a slight degree of redness. He had even the courage to place it upon his own and his servant's tongue; and the only sensation experienced was a sweetish taste, and a slight feeling of constriction. Such experiments, frequently repeated, led to the inference that, provided the mucous surface of the mouth and tongue was not abraded, there was no absorption of the poison. These are conclusive experiments as far as regards the poison of the viper; but they go no further. Dr. T. thinks we should commit a serious mistake if we, from these facts, formed similar conclusions respecting all other poisons. If Fontana had experimented upon the serpent, whose venom is more deleterious, he would probably have obtained poisonous effects; for M. Rousseau experimented some years ago upon the rattlesnake, and he found that its poison was absorbed by mucous surfaces, and that animals died into whose eyes it had been inserted. It is to be regretted that M. Rousseau did not introduce the poison into the stomach of an animal; for probably, if he had done so, its destructive power would not have been neutralised by the gastric action. The term virus, created by pathologists to express a particular germ, producing in the system to which it is applied special and constant symptoms, and always the same for each virus, is nothing more than an abstraction which includes the complex ideas of very different products. It has tended to group under one name morbid stimuli, the essence of which is unknown, and whose mode of action is very different. Each of them has peculiar properties, and produces peculiar effects, and therefore no general conclusion can be derived from experiments formed with any one singly. They must be studied and experimented upon separately.

THE EPIDEMIC CHOLERA.

On the Etiology of Epidemic Cholera. By ALEXANDER TURNBULL CHRISTIE, M.D., of the Honourable East-India Company's Service; Member of the Royal Asiatic Society of Great Britain and Ireland, of the Wernerian and Royal Medical Societies of Edinburgh, &c.

(Continued from page 100.)

I AM aware it may be objected to the view I have taken of the subject, that in many cases of cholera there has been neither vomiting nor purging. I will shew, however, that the catarrhal affection of the mucous membrane is not only present in such cases, but is even sometimes greater than in those cases in which vomiting and purging are most urgent. I have opened the bodies of patients in whom the symptom of vomiting had been entirely wanting, and found the stomach filled with serous fluid, and its inner surface lined with a white coagulum.

CASE. Shaik Ebram, a convict, aged thirty-six, when at work in the open air, on the 9th May, was attacked with purging at two P.M. He was brought into hospital at half-past four o'clock; up to which time he had been purged only four times, and had not vomited once. He was weak. He exhibited no signs of pain or uneasiness; and, although unwilling to be roused, was perfectly sensible. No pulse at his wrist; features collapsed, and skin cool. Spasms did not occur throughout the case, except a slight twitch, of short duration, in the muscles of the loins.

It is unnecessary to give a minute detail of the treatment. Suffice it to say, that I attempted to bleed him from the arm and temporal artery, but could only procure an ounce of dark-coloured blood from the former. He took two scruple doses of calomel, some tincture of cardamoms, cajeput oil, and camphor mixture. Boiling water was applied to the belly, and sinapisms to the legs and feet; but nothing was of the slightest avail. He died at six o'clock.

His body was examined the same evening, a few hours after his death, and presented the following appearances: Considerable congestion of the veins of the stomach and mesentery. The stomach contained a very large quantity of serous fluid, and a small quantity of food, and its mucous coat was white, lined with coagulated fibrin,* and exhibited a little redness near the pylorus. The intestines were in many places contracted: they contained a large quantity of white and transparent serous fluids, and their mucous membrane was lined with a white coagulated fibrin throughout its whole extent. The liver was healthy. The gallbladder contained healthy bile. Considerable congestion of the meningeal veins. No inflammation in any of the contents of the cranium. The tuber annulare, and upper part of the spinal marrow, were healthy.

About the same time another convict died of cholera, who had no vomiting, and in his stomach I found a larger quantity of the coagulated secretion than I had ever observed in any other case. Thus we see that, although there be no vomiting, there is nevertheless a severe catarrh of the gastric mucous membrane. The same observation, I am convinced, will hold good respecting the state of the enteric mucous membrane as connected with purging. Mr. Scot, at page 13 of his Report on the Epidemic Cholera, says, "In cases where little or no purging has taken place during life, the intestines have yet been found, after death, to be filled with the congee-like matter, as if they wanted energy to throw it off, or as if a stricture had been formed on the lower portion of the gut." Indeed, the case of Shaik Ebram also, to a certain extent, proves the same thing; for in it the purging was very trifling, and the quantity of diseased secretions in the intestines was very great. But this case is still further useful, by shewing what an immense quantity of the diseased secretion may be thrown out by the mucous membranes in a very short time; and also that these diseased secretions are sometimes the only morbid appearance of any consequence in cholera.

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* The secretions in this case were examined chemically, and afforded the results already stated.

Let us now inquire how the catarrhal affection, which we have shewn to be invariably present in cholera, produces the other morbid changes, and the symptoms of the disease: and first, respecting the changes in the circulation; the congestion in the veins of the viscera has been already explained. This we have stated to be of invariable occurrence in severe cases, which we might have been led to expect, from the discussions we have entered into upon the etiology of mucous membranes. The greater the discharge from the alimentary canal, the stronger and more abundant will be the current of blood directed towards it, to supply the waste; and the vessels at the surface being thus drained of their contents, all those appearances of collapse, shrinking, with loss of pulse, which have been described among the symptoms, must necessarily take place. But the danger of every disease depends in a great measure upon the rapidity of the invasion; and this is particularly the case in cholera; for the rapidity of the determination towards the viscera being in proportion to that of the catarrhal affection, the former may occasion such a shock to the vital organs as to prove soon fatal. When, on the other hand, the disease approaches gradually, commencing with nausea, or an insidious diarrhœa, the determination of blood towards the viscera takes place slowly, and the circulation is kept up tolerably well towards the surface for some time. Lastly, when the invasion is ushered in with inflammation, the pulse is at first strong and full, and symptoms of congestion do not occur until the catarrhal affection is established.

Having accounted for the congestion in the abdominal viscera, it may now be asked, what occasions the venous congestion in the thorax and encephalon? I will answer this by putting another question: what occasions a similar congestion in animals which have been bled to death? It would appear that the abstraction of a very large quantity of the circulating fluid tends to cause the remainder to accumulate in the internal parts: how it does so, is another question; but, if the fact be allowed, it exactly accords with my views of cholera; for I have shewn that the quantity of the blood is much diminished by the drain from the mucous membranes. I imagine the congestion in the encephalon generally does not take place until a very short time before death; for we can scarcely suppose that the mental faculties and the senses would remain so unimpaired as they frequently do, until within a few minutes of the fatal termination, if the brain were loaded with blood.

Next to congestion, the most important morbid appearance is the altered condition of the blood; which also receives a clear and satisfactory explanation from the diseased secretion of the mucous membrane. It would have been wonderful, had the blood retained its healthy appearance after being deprived of so large a quantity of serum and fibrin; and are not the diseased appearances observed in it exactly what we might have expected, *a priori*, from the abstraction of so much of these substances? It must necessarily become thicker when deprived of an inordinate quantity of serum, and darker, from none of its colouring matter being discharged, the fibrin which is secreted being always white. It has been sometimes said to have been thin and watery; but this is of rare occurrence, and may have been owing to the cholera secretion containing a larger quantity of fibrin than usual.

The explanation of the diminished secretion of urine and saliva is evident. It must be referred to the small quantity, and perhaps also to the altered condition, of the blood which is sent to the kidneys and salivary glands. All parts of the body are robbed of their due proportion of the circulating fluid to supply the expenditure of the mucous membranes; and the little they do receive is vitiated, and therefore ill suited to administer to their healthy functions.

But we have still to account for an important symptom, which often forms a prominent feature in the disease; I allude to the copious cold sweat. The skin is properly considered as a continuation of the mucous membranes, which it resembles in its structure and functions. The different parts of the mucous system, including the skin, are linked together by sympathies; one of the most conspicuous of which is that which exists between the gastro-enteric membrane and the periphery. When the action of the former is increased by an emetic, by a purgative, or even by warm fluids, the latter sympathises, and the cuticular secretion is increased. This is a wise provision of nature, whereby the tendency to congestion, from the determination of blood which takes place towards the mucous membranes, is lessened, and a copious perspiration is in this way often a most salutary operation, whether excited by art or by nature. But, in cases of epidemic cholera, the perspiration, however copious, is seldom capable of counteracting the congestion caused by the overwhelming catarrh of the mucous membranes; and the cold clammy sweat has accordingly been sometimes rather figuratively, but perhaps not inaccurately described as an ineffectual effort of struggling nature to restore the circulation towards the surface. It is indeed remarkable that there is sometimes a copious perspiration when the pulse at the wrist is extremely small, or nearly imperceptible. This has generally been considered as indicative of extreme debility of the perspiratory vessels. On the other hand, I am inclined to think that these vessels have their action very much increased; for, were the reverse the case, how does it happen that, when only a small quantity of blood flows sluggishly, or in drops, from a large orifice made in a vein, or even when no blood can be procured, the cuticular secretion forces its way through the minute pores of the skin? When the arteries do not contain a sufficient quantity of blood to enable them to continue their own action, the only way in which perspiration can be thrown out is evidently by an increased action of the perspiratory vessels. But perspiration is by no means an invariable symptom of cholera; for in some cases there is only a slight moisture about the face and hands, and in others the whole skin is perfectly dry.

It is an interesting fact, that a similar phenomenon to the above takes place in animals which have bled to death. Sir Charles Bell says: "If a glass be attached to the artery of a horse, the column of blood will suddenly rise in the tube, marking the force of circulation. If the animal be bled from another vessel, the blood will descend in the column as the force of the circulation is enfeebled. When the blood is very low, and the animal dying, the surface will break out profusely in perspiration. It must be concluded, that the force of the internal impulse is not the cause of perspiration. Again, the most persevering efforts in injecting the vessels will never bring the water through the pores of the skin; and if a dead body be carried near the fire, the heat will not bring out one drop of fluid from the pores of the cuticle."* Sir C. Bell therefore concludes that the perspiration is produced solely by the vital action of the perspiratory capillary vessels.

Since the epidemic cholera is a disease of the mucous system generally, and since the skin is considered to belong to this system, the increased discharge from the latter may be considered not to arise from sympathy, as already conjectured, but rather as a simple extension to the periphery of that morbid action of the internal membranes which constitutes the disease. But the laws of sympathy are so obscure, and so little understood, that both of these opinions may, for all we know, amount nearly to the same thing, and either may be adopted consistently with our theory. It will be necessary here to take notice of the following argument, which has been urged against these views. It has been said, "it seems but reasonable to expect that, if a disease similar to that which produces such an afflux to the interior existed simultaneously on the surface, there would be a division of the blood between the centre and the periphery, and, instead of smallness or imperceptibility of the radial pulse, we should expect to find it tolerably forcible."† The answer is very simple and obvious: such a determination is generally prevented by the great intensity of the disorder in the internal membranes, which form a surface more extensive than the whole of the skin, and throw off a quantity of fluid far superior to that of the most copious sweats. Nevertheless, the blood is sometimes directed towards the surface; but then what takes place? There cannot be both a determination of blood towards the interior and towards the periphery at one and the same time: the balance of the circulation is therefore restored, and the disease ceases.

A very distressing symptom, which occasionally occurs in cholera, is difficulty of breathing. It is plainly to be attributed to the obstruction of the minute bronchia by their diseased secretion: it cannot be referred to spasm, for it often occurs in cases in which spasms are entirely wanting. The stethoscope might afford us some assistance in the diagnosis of this part of the disease.

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* An Essay on the Forces which circulate the Blood, by Charles Bell. London, 1819.

† Medico-Chirurgical Review, No. 19, December 1828, p. 126.

Coldness of the skin, which is one of the most characteristic symptoms in the advanced stage of the disease, is clearly owing to two causes: 1st, to the diminution in the quantity of blood sent towards the surface; 2dly, to the altered condition of the blood.

Debility of the voluntary muscles is a common symptom of cholera; but in many cases it is by no means so great as we might be led to expect from the very extensive diseased condition of the mucous membrane. Sometimes, when the pulse is scarcely perceptible at the wrist, the patient is still able to walk; and, long after the pulse has ceased at the wrist, (although perhaps not able to move about,) he is often sufficiently strong to sit up, to use his arms and hands, to speak, &c.

When we consider the great diminution of muscular power that is sometimes occasioned by simple vomiting, by a diarrhœa, or by a large dose of tartrate of antimony, we cannot be surprised at the great debility that often occurs in cholera; and the only cause of astonishment is, that this debility is not invariable. This, however, in concurrence with the perfect state of sensation, clearly shews that the debility of the muscles is not owing to diminished energy of the nervous system. A person is attacked with cholera; the blood gradually leaves the surface, which, as might be expected, occasions more or less muscular debility; his mental faculties, however, remain undisturbed;* all the external senses continue perfect; and, in fact, almost all the functions of the nervous system are for a long time unimpaired, until, near the fatal termination, they become affected by the great derangement of the circulation.

In some cases of cholera, anxiety, and an overpowering sensation at the præcordium, generally denominated sinking, are very distressing symptoms. The latter is, most probably, only a variety of the former, from which it appears principally to differ in being more severe. Both may be attributed either to the disordered state of the stomach or of the lungs; sometimes, perhaps, they are referrible to the one, sometimes to the other.

Spasms have been by no means of invariable occurrence in the cholera of India, and are clearly referrible to irritation in the gastro-enteric mucous membrane, whether this proceeds from inflammation, or a sudden determination of blood towards the parts, in consequence of the catarrh. They are almost always present in cholera morbus, and in mixed cases, and are much more frequent in European than in native patients, owing to the greater irritability and tendency to inflammation in the former.

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* Vide Annesley's Sketches of the Diseases of India, p. 21; also Anoomah's case, p. 58, and the cases in the Appendix.

When we consider what violent spasms arise from comparatively trifling irritation of the primæ viæ, we cannot be surprised at their frequent occurrence in cholera. The absence of spasms in those cases in which there is only catarrh of the mucous membranes, without inflammation, is quite consistent with what we know of the nature of catarrh; for it never directly produces any sensible effect on the nervous system.

If, in addition to the catarrhal affection, inflammation be present in the mucous membranes, the symptoms of the disease will of course be more or less modified. If the inflammation be not very violent or extensive, it will probably be indicated only by local pain or burning, or perhaps merely by pain on pressure. If it be great, it will excite the action of the general circulation.

Frequently pain in the abdomen does not occur until a late stage of the disease, and in these cases is probably owing to inflammation. It has been observed by several medical men that calomel is often found adhering in patches to the inner surface of the stomach of those who had died of cholera, and in these places only was there inflammation. In several cases I have found appearances of inflammation in the pyloric extremity of the stomach, where the stimulating medicines given for the cure of the disease were collected. It would appear, therefore, that inflammation is sometimes occasioned solely by the violent remedies used for the cure of the disease.

It is a curious feature of many cases of cholera, that there is great thirst, while the mouth at the same time is perfectly moist. It is however by no means an invariable symptom; and I am inclined to think that it is sometimes occasioned by the stimulating medicines given to the patient, and sometimes to inflammation being conjoined to the catarrhal affection of the stomach; for it is found to be most urgent in cases where there is great pain at the præcordium.

Cholera morbus is accompanied with increased action of the circulation, hot dry skin, &c. In it, therefore, there ought to be (consistently with our pathological views,) acute inflammation of the mucous membrane of the primæ viæ. The few authors who have taken notice of the post-mortem appearances in this disease state that marks of inflammation were found in the mucous membrane of the primæ viæ; and the symptoms of inflammation of this membrane are so well marked during life, that we scarcely require more positive proof of its presence. To what else can we refer the burning at the epigastrium, pain of abdomen, especially on pressure, heat of skin, and quick, hard pulse? Moreover, the vomiting and purging in cholera morbus are very different in their nature from those which occur in the catarrhal form of the disease; for they never contain the sero-fibrinous secretions which characterize the latter, but consist principally of bile.

That cholera morbus consists of an inflammation of the gastro-enteric mucous membrane, may perhaps appear questionable, from the circumstance of its generally running its course very rapidly. But it appears to me that this is exactly what we might be led to expect from the nature of the disease; for, if the mucous membrane of the primæ viæ be suddenly affected with inflammation, a rapid determination of blood takes place towards it; and, since it possesses an excretory apparatus, an evacuation will probably be thrown out from its extensive surface, whereby the inflammation will be quickly subdued, and the disease removed; or, if the evacuation be inordinate, it may degenerate into catarrhal cholera, and thus soon prove fatal.

All the other symptoms which occasionally occur in cholera are of minor importance, and do not require to be taken into account in a general view of the pathology of the disease. It is necessary however to advert, in a general manner, to those affections which arise from accumulation of blood in the head, such as apparent coma, tennitus aurium, deafness, &c.; for to this accumulation some have referred the proximate cause of the disease. But, far from its being the proximate cause, it is by no means a general occurrence; and in no case does it occur until the latter stages of the disease, and until after all the other symptoms have been developed.

If the preceding pathological views be found to be correct, it will follow that there are two essentially different kinds of cholera: one, the disease usually denominated Cholera Morbus, or Cholera Biliosa, consisting of an inflammation of the gastro-enteric mucous membrane; the other, the Indian Cholera, or Cholera Asphyxia of Scot, consisting of a violent catarrh of the mucous membranes generally; and, further, that cases sometimes occur of a mixed nature, from catarrh and inflammation being present in the mucous membranes at the same time. Should these views be adopted, the correct designations of the two principal species of cholera would be Cholera Pyretica and Cholera Catarrhalis; the former being the cholera morbus, the latter the epidemic cholera, (Cholera asphyxia of Scot,) and Cholera spasmodica of some other authors.*

As it is the opinion of some that, in my former work on the Pathology of Cholera, I have allowed to the nervous system too little participation in the phenomena of the disease, I beg leave to state here what are my exact views on this subject. I conceive that every part of the animal frame ought to be considered as a compound body, made up of a certain number of essential elements, such as nerves, blood-vessels, capillaries, &c., all of which act and react on each other, and no one of which can be affected in any way without influencing the rest. Now, in a great many diseases, (although perhaps not in all,) I would be inclined to refer the morbid condition to the compound body of nerve, blood-vessel, and capillary, of which the affected part consists, not to any one of these elements exclusively; just as we refer the phenomena of galvanism to the compound arrangement of two metals and an interposed fluid, and not to any of them taken alone. When I say, therefore, that the cholera is a disease of the excretory apparatus of a mucous membrane, I mean that it is a disease of a certain complicated arrangement of nerves and vessels, which requires the concurrence of all its elementary parts for the proper performance of its functions. These act together to produce certain results, and the derangement or abstraction of any one of them would certainly derange the whole. Let us suppose that the usual powerful and striking effects of our galvanic battery should become enfeebled, we should probably find, upon examination, that this arose from oxydation of some of its plates; but, not content with this discovery, we might push our inquiry a little further, and find that the oxydation itself has been caused by the acid of the interposed fluid. So, in cholera, we have discovered that the disease depends upon an affection of the mucous membranes; and further investigations *may* enable us to make another step, and to demonstrate this affection to be caused, in its turn, by some peculiar state of the nerves. Should this be clearly made out, I should be the first to hail with pleasure so important an addition to our knowledge of pathology; but I must maintain, that at present we have no proof of any affection of the nervous system forming the first link of the disease. This is an inquiry, however, that is highly deserving of being prosecuted; for there are many familiar facts which shew that the nervous system exerts the most important influence over the actions of the capillary vessels, and especially of those which produce the secretions. I need only mention the action of blushing from shame, the secretion of tears from grief, the secretion from the stomach by disgust. The valuable observations of that excellent philosopher, Sir Charles Bell, on the nervous system, and the late brilliant discoveries in animal electricity and electro-magnetism, would incline us to believe that we are on the very verge of some great discovery on the philosophy of life, which will probably enable us to ascertain the exact influence (no doubt very great,) which the nerves have in the production of the various functions of the animal frame. Our knowledge of the pathology of cholera may be compared to that which the chemists possess in regard to some substances which are *suspected* to be compound, but which have not yet been analysed; and, notwithstanding that their compound nature is admitted to be probable, yet chemists continue to treat them, and to reason upon them, as if they were elementary. We have analysed the cholera to a certain extent, and we may in time gain possession of a formula by which we shall be able to reduce it to still more simple elements: meanwhile, do not let us wander into the regions of conjecture, indulging in wild theories, which might turn us away from the sober but sure path of inductive reasoning and experiment, which alone lead to truth.

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* Consistently with these principles, cholera may perhaps be considered objectionable as a generic term. But, if (instead of deriving it from χολη, *bilis,*) we adopt the derivation of Trallian,[a] Castellus,[b] and others, viz. of χολας, *intestinum*, the term will then bear the accurate signification of intestinal flux; and to which the above terms, Pyretica and Catarrhalis, will serve as appropriate specific adjuncts.

[a] Vide Good's Study of Medicine, second edition, vol. i. p. 260.

[b] Nomen habet non tam αχολη, quam αχολας, i.e. intestinum, per quod materia ex ventre excerrutur.—Bertholomæi Castelli, Lexicon Medicum. Lipsiæ, 1713.

Causes of Cholera.

Having pointed out the nature of the disease, and demonstrated, I hope satisfactorily, that it has its seat in the mucous membranes, I will now proceed to inquire into its external causes, and the mode in which it is propagated.

Although epidemic visitations had not been of frequent occurrence before the year 1817, sporadical cases had often been met with in India, and had been almost invariably attributed to atmospherical vicissitudes. The disease is generally most prevalent during changeable weather, and ceases when the weather becomes serene and temperate. It usually makes its attack during the night, or early in the morning, especially if the individual has been fatigued during the day; and it is notorious that it is most prevalent among troops when marching, for they then undergo more fatigue, and are more exposed to the cold night-air than usual. In these respects, then, it strongly resembles catarrh, diarrhœa, and dysentery. But it is also excited by a different set of causes; viz. by such as, instead of acting on the skin, are applied directly to the mucous membrane of the primæ viæ. Thus, it has often arisen from a large dose of salts; unripe fruit has been known to cause it; and it has very often been induced by a large draught of cold water, buttermilk, &c. Its causes, then, may be said to be such as excite a catarrh in the mucous membranes, especially in those of the primæ viæ.

But, after the disease became fairly established as an epidemic, it broke through all its former laws, sparing neither sex, age, nor rank; prevailing at all seasons, and visiting all situations and all climates. We therefore now arrive at the important question, whether it is capable of being propagated by contagion or infection?* On a slight consideration of the subject, one might be inclined to believe the disease to be infectious or contagious; for, after its appearance in Bengal, in 1817, it gradually spread thence from place to place, till it reached the most distant parts of India, China, and all the islands of the Eastern Archipelago, Persia, and at length Russia; checked neither by climate, contrary winds, nor intervening seas. Upon examining the question a little more closely, however, we shall find that numerous facts and arguments are hostile to this belief; a few of which I will now proceed to examine.

When spreading across a tract of country, the disease has often been known to spare one or two towns, and to appear in the next, although all must have been equally exposed to the infection, had any existed. It has been known to rage among troops in a town, while the townspeople escaped; or to attack the townspeople, and to spare the soldiers. A troop of horse-artillery, of which I had charge at Kulladghee, in 1824, suffered severely for about a fortnight from the disease; while all the other corps at the station, although maintaining an uninterrupted intercourse with the artillery, were exempt. My dresser, who lived in a room attached to the hospital, caught the disease, and died; but not one of the other patients who lay in the same ward with those labouring under cholera were attacked. I have repeatedly remained for hours by the bedside of cholera patients, and never received the infection.

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* These terms being variously employed by different authors, I find it necessary to state that, by a contagious disease, I mean one which is capable of being communicated by contact; by an infectious disease, one which can be conveyed from one person to another through the medium of the air.

A regiment has been frequently known to march through a country, when suffering from cholera, without communicating it to the inhabitants; and, on the other hand, the disease has often prevailed in a country, without attacking the troops which passed through. It has very often happened that a single individual in a family has caught the disease, without communicating it to the rest. Of two corps on a march, and keeping up the most unreserved intercourse, one shall suffer from the disease, and the other escape. "Detachments of a regiment, arriving from a particular place, suffer severely; while the rest of the regiment, which has remained stationary, shall hardly furnish a single case, although the former may be living in the same barracks, and their sick in the same hospital."* Now, although facts like these, if taken singly, might not perhaps be thought conclusive, yet, when it is recollected that they have been of constant occurrence ever since the first appearance of the epidemic, we must, I think, consider them, when united, as affording strong evidence against the infectious or contagious nature of the malady.

It has been supposed by some medical men that the epidemic was introduced into the Mauritius by ships from India; but it is sufficient to state, in opposition to this, that the commission of medical officers appointed by the government of that island to investigate the nature of the distemper, gave it as their decided opinion that it was not contagious. Notwithstanding the strictest quarantine having been insisted on in the island of Bourbon, the disease appeared there in January 1820. The minds of the people being then filled with notions of contagion, supposed it to have been introduced by means of a boat which had communicated with a ship from the Mauritius; but this was merely a supposition, unsupported by proof. That it was introduced in a similar manner into Trincomalee, is also highly improbable; and it has been already mentioned that it had existed in Ceylon for more than a year previously to the arrival of the infected ship which was said to have imported it. I need only refer to the general history of the epidemic, as confirmatory of its non-contagious nature. Thus, in its progress through the Indian islands, it sometimes visited the most distant first; just as it had previously proceeded on the continent of India, where several towns on a river, or high road, were

* Madras Report.

passed over, and those at a distance beyond were first attacked. The progress of the epidemic through Persia, Syria, and Russia, abounds with examples of the same kind.

Amongst its first victims in Shirauz were the wife, mother, and child of the prince of Persia, who, confined to their haram, were little likely to be exposed to contagion or infection. Another case of a similar description, but still more remarkable, has been already mentioned; viz. that the city of Oudeypore had long continued free from the disease, but, while the inhabitants were congratulating themselves with the belief that they were beyond its western limit, they were surprised and terrified at the intelligence of their prince and his minister having been attacked by it in the very palace, while the city was still perfectly healthy. Such being the case, what would avail the most careful sanitary cordon, and the strictest quarantine?

The following paragraph is from the work of Mr. Annesley, whose extensive experience must entitle his opinion to the highest consideration.

"As the non-contagious nature of the disease is very generally admitted by the medical authorities of India, who have had sufficient experience of the disease, and as this property is generally believed in by the community at large, I should not have thought it necessary to advert to a contrary opinion, had not that opinion received the support of some distinguished medical authorities. I cannot, however, but think it unfortunate that the idea was ever suggested, because the dread of contagion may lead to serious consequences; inasmuch as it may withhold from the sick that assistance which they so much require. The strongest proof which I can adduce in opposition to it came fully under my own experience, which has not been inconsiderable, and was derived chiefly from what I observed in the general hospital at Madras, whilst it was under my charge. This hospital generally contained from 170 to 200 patients, natives and Europeans; the wards were open, and a free communication existed between them; and yet, although patients were daily brought into them, suffering under epidemic cholera,—although these patients were indifferently distributed throughout the hospital, and consequently not secluded from the rest of its inmates, no more than five or six persons, exclusive of the two already noticed, were seized with the disease, while patients in the hospital, during a period of five years; and certainly these cases could not be imputed in any degree to contagion. I can view them merely as cases of cholera occurring under circumstances of predisposition, during the prevalence of an epidemic cause, and as shewing even a much diminished ratio of attack to that observed where the disease prevailed."

Sir Gilbert Blane, in a letter to the court of directors of the East India Company, in 1825, advocates the theory of contagion; but, while we admit the great consideration that so high an authority is entitled to, we must keep in mind that he had never an opportunity of attentively watching the progress of the disease in the countries where it prevailed; and his single opinion is opposed to that of almost all the distinguished surgeons of India.

Monsieur Moreau de Jounes also, in a communication to the Institute of France, on the 22d of November, 1830, professes his belief in the contagious nature of the cholera, derived from the history of its progress through the countries it has already visited; and, consistently with this notion, he supposes it to have been introduced into Oremburg, in Russia, by the caravans which bring from Bokhara the merchandise of Thibet, Cabriel, and India. But Baron Humboldt, who was present at the meeting, stated, in opposition to M. Moreau, that the cholera had not made its appearance at Oremburg before his departure from that town, although the caravans had arrived nearly four months before; and that the plains of the Kirguises, which these caravans had traversed, had not been infected with the malady. It may be also mentioned, that the inhabitants did not suppose it to have been imported, but to have been produced by atmospherical influences.

I would observe, then, in conclusion, that the only plausible argument for supposing the disease to be contagious or infectious is, that it has spread from Bengal, as a centre, in a very gradual manner, to distant countries, and has prevailed in all climates and situations; but that in this respect it does not differ from other epidemics, some of which have had an equally wide diffusion, and which are always admitted to be non-contagious. Further, many facts already detailed respecting the progress of the disease are perfectly irreconcileable with the theory of contagion or infection; and those few which appear favourable to this doctrine are readily explained by the opposite. I have therefore no hesitation in giving it as my decided opinion, that cholera is neither contagious nor infectious, and consequently, that quarantine and sanatory cordons will prove completely inadequate to check its progress.

The disease has been supposed to arise from malaria; but this opinion will be found to be as untenable as that which supposes it to be contagious. Some sporadic cases have doubtless had the appearance of having been produced by malaria; but this has been by no means the case with the epidemic, the progress of which in India was often in direct opposition to the prevalent periodical winds. It often rioted in the low, confined, and crowded abodes of the poor; but they have escaped when it has penetrated into the spacious airy dwellings of the rich; and occasionally (although seldom) it has extended to lofty dry situations, while the low damp country around was spared. During the prevalence of the epidemic at Madras, "the labourers at certain public works, who were protected from the weather, who were well clothed and fed, and who had no unusual work to perform, suffered from it severely; while a body of many hundred people, employed in digging and cleaning out the beds of stagnant, brackish, and extremely putrid waters, equally during the heats of the season as during cold and rainy weather, entirely escaped. This immunity is the more remarkable, inasmuch as many of them laboured during the night, for the purpose of preventing the accumulation of water, and were of course exposed, with very scanty clothing, to the utmost vicissitudes of heat and cold, and to all the exhalations and depositions of the very tainted air in which they worked."* These facts are directly opposed to the laws which govern malaria, which is capable of being conveyed to a certain distance by the wind, but never travels against it; which is usually generated in low, filthy, or in marshy situations, and seldom extends far from the place which gave it birth.

At the commencement of the epidemic, much importance was attached by some medical men in India, especially by Mr. Orton, to sol-lunar influence, as an exciting cause of the disease; but subsequent experience has decided against this opinion. The number of cases of cholera in the Madras army, for a period of about two years, amounted to 7664; "and of these it appears that 3725 were admitted into hospital during the quarters of the new and full moon, which, according to Mr. Orton, are the morbific periods; and 3939 were admitted during the first and last quarters, which, according to that author, are non-morbific periods. Thus, between the morbific and non-morbific there is only the difference of 214 cases in 7664, and the excess lies on the side of the non-morbific. We may hence safely conclude that cholera is not directly affected, in individual cases, by sol-lunar influence."†

* Madras Report. † Ibid.

It has been very generally supposed that certain articles of food act as exciting causes of the disease; and several facts have been already mentioned which appear to countenance this opinion. Sporadic cases, it is well known, are produced in all countries by unripe fruit; and it is generally admitted in India that cold rice and curds, and cold drinks, frequently act as exciting causes. In fact, it may be said that any thing which has a tendency to occasion a catarrhal action in the mucous membranes may act as an exciting cause, and ought therefore to be carefully avoided during the prevalence of the epidemic; while warm and tonic substances are likely to be beneficial. Accordingly, the Madras Medical Board, in its instructions for guarding against the disease, recommended a general spicy diet. Bad rice, or what is called ooze rice, in India, has not only been considered to act as an exciting cause, but has been even thought to be the sole cause of the epidemic; and this opinion excited at one time much attention, from the persevering manner in which it was supported by Dr. Tytler, of Bengal, who even went so far as to change the name of the disease to that of *Morbus oryzeus*. This theory has now very few, if any advocates; and it is notorious that all persons, whatever may be the nature of their victuals, are liable to be attacked. Certainly, articles of diet undoubtedly predispose to, or act, as exciting causes of the disease, but there is not a single reason that would lead us to suppose them to have a more extensive influence.

The epidemic has been supposed to be owing to certain changes or peculiarities in the electrical state of the atmosphere; but this theory rests upon such slender grounds, and, from the present imperfect state of our knowledge respecting the constitution of the atmosphere, is so little susceptible of being fully developed, that it affords us little room for discussion. There can be no doubt that the air is often affected by changes which are not indicated by our most delicate instruments, but which are nevertheless very sensibly felt in our frames. Who has not observed the oppression and uneasiness which, to all appearance, is shared by all animals before a thunder-storm, and contrasted these with the feelings of buoyancy and exhilaration which have succeeded when the weather has become serene? Now, it is a curious fact, that the cholera has often been observed in India to have been cut short by a thunder-storm. An instance of this sort has been already noticed in the history of the disease, as having occurred at Madras in 1818; and another fell under my own observation at Kulladghee in 1824, when the epidemic, after having continued for about a fortnight in the troop of horse-artillery stationed at that place, was suddenly cut short by a severe storm of thunder and lightning. We may therefore reasonably expect that the science of meteorology, when brought to a higher state of perfection by extensive and accurate observations, and by the aid of more delicate instruments than we now possess, will detect many properties of which we have at present no conception, and which will afford explanations of numerous diseases, and other phenomena of organic bodies. But until then, while we strive by experiment, and a severely strict mode of reasoning, to add to our knowledge, we must not hesitate to confess our ignorance, and to abstain from conjecture and hypothesis, which might lead us away from the truth, and, by obscuring it, might induce us to relax our efforts in its search.

Not to refer the cause of cholera, then, to any indefinite and unintelligible property of the earth or air, I will attempt to generalize the facts connected with the subject already in our possession, and which have been detailed in the preceding chapters.

1. Cholera may originate spontaneously in places which have been long free from it; as shewn by its repeated occurrence in India, and by its occasional appearance in other countries.

2. Unusual and disturbed states of the atmosphere have generally been found to precede its appearance, and may therefore be considered to be favourable to its development.

3. The concourse of great numbers of people; exposure to the inclemencies of the weather; fatigue, filth, and poverty; draughts of cold fluids; unripe fruit, and saline purgatives, have been always found to act as exciting or predisposing causes of the disease.

4. The epidemic influence is capable of spreading in all directions over great tracts of country, and across a wide expanse of ocean, without being conveyed by individuals in the form of contagion, or wafted in the form of gas or vapour by the air, like malaria. Quarantine observances are therefore incapable of arresting its progress.

5. One attack of the disease does not secure an individual against a second.

6. A clear serene atmosphere, and a great elevation above the level of the sea, have generally been found hostile to the disease.

7. This bears a very striking analogy to other epidemic diseases; all of which have their seat in the mucous system, are considered not to be contagious, affect all situations and every description of people, and one of them (the influenza

of 1803,) stretched over a surface equal to that already visited by the cholera; viz. from the confines of China to the western parts of Europe, and thence across the Atlantic to North America.

Treatment of Cholera.

The great value of a correct knowledge of the pathology of a disease consists in its making us acquainted with those morbid conditions, the removal of which will restore the body to health. If then the preceding views be correct, we have gained a most important desideratum. We know what those morbid conditions are in cholera against which our remedies must be directed, and the removal of which must form the grand object of our treatment. Accordingly, in the catarrhal cholera, there will always be two principal indications of cure; viz. to remove the diseased action of the mucous membranes, and to restore the circulation of the blood towards the surface. The first will always be present; the second only after the disease has made some progress, and in all severe cases. But, in order to effect these indications, we shall require to employ different means under different circumstances, and to vary our remedies according as certain symptoms predominate, or are wanting. We cannot expect therefore to discover any remedy or specific that will be applicable in all cases; and it is clear that there is just as much necessity for a practitioner to exercise his judgment in treating this, as in treating any other disease in the whole range of the nosology.

Bloodletting. It is generally admitted, in India, that bleeding is one of the most useful remedies we possess in the treatment of cholera. I conceive that it ought to be practised not only when there is increased action, but even in every case in which blood can be obtained, however much its quantity may have been diminished towards the surface; except only when there had been great debility previous to the attack. It appears to act as an indirect excitement; it causes the heart and blood-vessels to propel the blood with great energy towards the surface; unloads the congested vessels of the viscera, and thus restores the balance of the circulation. Even in the advanced stage of the disease, when the pulse has been scarcely perceptible at the wrist, I have known it to rise as the blood continued to flow, and the circulation to be restored after the abstraction of twenty or thirty ounces. Numerous cases of a similar description have been published in the Indian Reports. A remarkable effect also which is produced by venesection, is the change in the state of the blood, which, from having been thick and of a dark colour, becomes, after the abstraction of a certain quantity, thinner, and of a natural red. "This is the change, (says Mr. Annesley,) which should always be looked for, and, whether it takes place after the abstraction of one ounce or thirty, is of no consequence; this change must supervene before the patient can be considered safe. Under all circumstances, therefore, I think we should never forego a trial of the lancet." This alteration in the state of the blood is probably to be attributed to the removal of the diseased condition of the mucous membranes.

After the first stage, it is always difficult to procure blood from a vein, on account of its diminished quantity towards the surface, and also of its thickened state, and the slight action of the vessel preventing its ready flow. Our efforts, however, ought to be persevered in as long as there is the least chance of success; if it does not flow readily from one arm, a vein ought to be opened in the other, at the same time, and leeches applied to the temples. The reason why I recommend this situation is, that I always put a blister on the abdomen, and the temples are then the most convenient place for their application.

"Few remedies, on a fair trial, have been more generally and unequivocally advocated than free bloodletting; and the most that has been urged against it is, that it is not always successful."[*] I have often found it to be most beneficial in the worst description of cases; but it ought not to be depended upon alone, for this is a disease whose rapidity requires the most prompt and decisive measures, and that we should call all our forces into action as quickly as possible; and, while we solicit the circulation towards the surface by means of bloodletting, we ought to urge it on by stimulants given internally, and by blisters and sinapisms applied to the surface.

I conceive that the success of bloodletting depends in a great measure on the quantity abstracted. It has been often observed that, after a small quantity of blood has been withdrawn, the veins of the arm are emptied, no more blood is propelled into them, collapse continues, and the patient sinks. But, on the other hand, when we succeed in keeping up a steady stream from the vein, and in thus causing a current from the interior towards the surface, we may entertain great hopes of success; and, in order to obtain this happy result, we ought not to allow our efforts to relax until all hope has fled. I have seen cases in which, upon a vein being opened in the arm, the blood has come from it at first only in drops, but, after long perseverance, by means of frictions to the arm and the application of warmth, the blood has at length flowed in a steady stream, has changed its colour, and the circulation towards the surface has been restored.

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[*] Madras Report. I have been lately favoured with the perusal of a letter from a Russian physician in Moscow to a gentleman in London, in which it is stated that bloodletting had been found there to be more hurtful than salutary; but at the same time the author recommends the application of leeches to the epigastrium. In India, leeches were never had recourse to, except where blood could not be obtained from a vein; and, in the absence of more definite information from Russia, I do not hesitate to give it as my opinion, that venesection, as employed in India, in conjunction with other means, will be found to be a most powerful remedy against the disease; for it would appear, from all that I can learn, that the symptoms of the epidemic in both countries are the same.

Blisters and Sinapisms. These are among the most beneficial, and certainly the safest remedies, that can be employed in cholera. Their mode of action is quite evident, from what has been said concerning the pathology of the disease. It has long been proverbial in medicine that there is always a determination of blood towards a part which is stimulated. By stimulating the skin, therefore, by epispastics and rubifacients, we restore the circulation of the blood towards the periphery, and thereby relieve the internal vessels, and consequently moderate the diseased action of the secretory apparatus of the mucous membranes.

I generally apply a strong cantharides plaster to the abdomen, and sometimes to the chest; cataplasms of mustard and capsicums to the feet and legs; and hot sand,[*] or friction, to the arms and hands. It is, I think, only in extreme cases that we ought to have recourse to boiling[†] water or acid for the purpose of raising a blister;[‡] for when there is sufficient time to admit of a blister being raised by means of a plaster, the constant stimulus which it keeps up appears to be more effectual in occasioning a steady determination towards the surface, than the sudden and violent stimulus of the former.[§] However, in two or three almost hopeless cases, I have seen the boiling-water blisters attended with the most favourable results. One of these was the case of a native woman in Darwar, who had been ill the greater part of the night. Her friends did not apply to me for medicines till nine o'clock in the morning. She then had no pulse at her wrist; her features were collapsed, and her skin cold. I ordered the boiling water to be applied immediately to the abdomen, and that she should have a little tincture of capsicums in some warm water. This was done: the circulation returned to the surface; and before the evening she was free from the disease.

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[*] It has been suggested to me by a Russian gentleman, M. Smirnoff, that chaff would answer equally well, and would be pleasanter to the feelings of the patient. Either it, or the sand, may be heated up to 120 Fahr., enveloped in a soft cloth, and thus applied to the parts to be heated.

[†] The following is the most convenient method of raising a blister by means of boiling water: A cloth, slightly twisted, must be held by its two ends, and its middle part must thus be dipt into a pot of boiling water; when well soaked, it must be suddenly drawn out, and instantly applied to the skin.

[‡] I have never succeeded in raising a good blister by means of acid, which has only acted as an escharotic; but the skin may be rubbed gently with it before the application of the cantharides plaster, in order to hasten its effect.

[§] Vide ORTON on Cholera, p. 418.

Stimulants. The most difficult part of the treatment of cholera is the management of general stimulants. Most of them, when judiciously employed, may be productive of benefit; but there can be no doubt that they have sometimes done harm. It is therefore an object of the first importance to ascertain the principles which ought to guide us in the exhibition of them. When applied to a mucous membrane, they stimulate the arterial capillaries, have thus a tendency to produce inflammation, and increase the action of the circulation. It is also probable that they check the secretion of the membrane. Their utility therefore is evidently confined to cases of the pure catarrhal cholera, and they are counter-indicated by pain and burning at the epigastrium, or in the abdomen, which they always aggravate. Alcohol, æther, ammonia, various stimulating tinctures, essential oils, bitters, tonics, and aromatics, have all been used with success in the low form of the disease; and especially when combined with bloodletting, blisters, external heat, and calomel; but all of them ought to be avoided when inflammation is present.

Ammonia, besides its stimulating property, may perhaps have some effect by dissolving the fibrinous matter which lines the inner surface of the bowels, and thus by allowing the other medicines to come in contact with the mucous membranes. The grey stools, which have been already described as a favorable symptom, are probably owing to the combination of ammonia and calomel with the cholera secretion, and appear therefore to point out this medicine as having a favorable effect upon the disease. It is astonishing what large quantities of stimulants may be given with impunity in the catarrhal cholera; but it must be always kept in mind that, as soon as the healthy action of the gastro-enteric mucous membrane is restored, they will begin to produce their usual effects, and will then (if in great quantity) be liable to induce inflammation. Purgatives must therefore be either given along with them, or as soon as the disease begins to take a turn, in order to make them pass rapidly through the bowels, and be discharged by stool. Many of those cases in which great excitement has been known to follow the disease, are, I am convinced, to be attributed to the large quantities of spirits, and other stimulants, which had been given to the patient during the attack, and which might probably have been prevented by a freer use of purgatives. The *drogue amère,* which was much in vogue at one time in India, and was employed in many cases with success, is a compound of stimulants, bitters, and purgatives, and appears well adapted to meet the indications of cure in many cases of the disease.

Calomel has been generally recommended in India as a powerful remedy in cholera, but practitioners have not always followed the same indications of cure in its exhibition. Some have given it merely with a view of exciting the biliary secretion; others, under the idea that it has *a specific effect* on the stomach and intestines; some suppose its efficacy to depend entirely on its sialagogue property, and that in this way it cures the disease by a sort of revulsion; its effects, again, have been attributed to its equalizing the circulation, or to its supposed sedative property. I conceive that most of these opinions are more or less erroneous. Its usual action on a mucous membrane, when given in a large dose, is to increase the secretion; in which case it renders the membrane white. If, however, its action be continued long on one spot, it gives rise to inflammation; which has been often observed in cholera; spots of inflammation having been frequently found, after death, in those parts of the mucous membranes to which the calomel adhered. The increased secretion which it produces is generally of a healthy description, is not inordinate nor watery, like that occasioned by the neutral salts, and is accompanied with an increased flow of bile. In regard to its general action on the system, "when given in moderate quantity, it communicates general vigour; it increases the force of the circulation, when this has become languid, by the increased vascular action which it excites; it gives to the blood the disposition to assume the buffy coat; and, by its stimulant operation on secreting organs, it promotes the secretions, and hence acts as a general evacuant."* How does it happen, then, that it has been considered by some, when given in scruple doses, to act as a sedative? This has evidently arisen from its secondary effects only having been taken into consideration, while its appropriate and primary effects have been overlooked.

Now, upon a consideration of the properties which we have just mentioned, we may conclude that, in all probability, calomel would be productive of more harm than benefit in catarrhal cholera, if employed alone; but, when combined with opium or stimulants, there is ample evidence to shew that it has been highly beneficial. In this form of the disease, our object, in its employment, ought to be to correct the diseased action of the gastro-enteric mucous membrane; to promote the secretion of the glands; to equalize the circulation; and, by its exciting the peristaltic action of the bowels, to cause all the medicines to pass along, and be applied to every part of their inner surface. We are told by Mr. Annesley, that calomel is most useful in removing the fibrinous matter, already described, from the mucous surface of the intestines; which I believe to be the case, and to be another highly important advantage of this medicine. He also supposes that the dark grey stools, whose appearance is always considered to be a most favorable symptom, are owing to the combination of the cholera secretion with the calomel. But I must mention that, by numerous experiments, I found that calomel produces no change upon the pure cholera secretion; and I imagine that the grey colour must be owing to the presence of ammonia, the combination of which with calomel is well known to occasion this colour. It is not improbable, therefore, that the secretion of ammonia by the gastro-enteric mucous membrane is a symptom of returning health. At all events, the occurrence of dark grey coloured evacuations may be always considered as an indication of a favourable change, for they shew that the calomel has done its duty, that part of the viscid fibrinous matter which might have obstructed the action of the other medicines has been removed, and that the peristaltic motion of the bowels has been restored. When bile also is added, a green colour is produced; and, accordingly, evacuations of this colour may be considered as a certain symptom of a return to healthy action in the abdominal viscera.

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* MURRAY's System of Materia Medica, vol. i. p. 196.

The usual mode of administering calomel in India has been to place twenty grains upon the tongue, and to wash it down with a draught of warm water and laudanum, or stimulants. The medicines which are given along with it must be regulated by circumstances: when there is no inflammation, stimulants ought to be preferred; when the bowels appear to be torpid, purgatives should be conjoined, or the drogue amère may be substituted. European physicians will probably be startled to hear of the large quantities of calomel which have been employed in this disease, for it was by no means uncommon to give it in repeated scruple doses to the extent of five or six scruples. Small doses in such a disease would be worse than useless; and the want of success in the employment of this medicine in Moscow, may perhaps have arisen from this circumstance not having been attended to.

Opium has been much extolled in the treatment of cholera.

Its primary effect is that of a diffusible stimulus; and it diminishes irritability, represses the secretions, and moderates inordinate actions. These properties point it out as a medicine well adapted for the catarrhal cholera; and, when given at the very commencement of an attack, it has often checked the disease. But, beyond this, it ought never to be depended upon alone; and indeed, in the opinion of many able practitioners, its employment, after the first stage of the disease, is considered to be more hurtful than beneficial. In the advanced stages therefore, stimulants may be substituted, or the opium may be employed only in conjunction with calomel. The latter combination was, in fact, at one time much recommended in India, and appears well calculated for fulfilling the intentions of cure in the catarrhal cholera; the requisite properties wanting in the one medicine being supplied by the other. Thus, calomel keeps up a permanent stimulant effect on the system, which opium does not. Opium represses the abundant discharge from the gastro-enteric mucous membrane, while calomel corrects it. Lastly, calomel increases the peristaltic motion of the bowels, and thus effects the discharge of vitiated secretions, while opium relieves irritation. It must at first sight appear paradoxical that purgatives should be required in a disease, one of whose principal symptoms is violent purging, but it has been already stated, in the description of the disease, that purging is sometimes entirely absent; and in many cases, in which there is an almost constant flow of serous fluid from the bowels, their peristaltic motion is nevertheless suppressed, and the fibrinous matter which has been so frequently mentioned is retained. Accordingly, it has been found, in many post-mortem examinations, that the medicines had proceeded no farther than the stomach, and that the intestines were loaded with the cholera secretion. Purgatives, therefore, are indicated in all cases in which the bowels appear not to propel forward their contents, and in which the action of the medicine is prevented by the retention of the viscid fibrinous matter which lines their mucous surface. They are also absolutely necessary in all cases during convalescence, in order to rid the bowels of the stimulating medicines, which would now prove hurtful, together with their diseased secretions; and also to prevent inflammation, which is sometimes a sequela of the disease. From the above observations, it is evident that their employment, during the attack, must be left in a great measure to the judgment of the practitioner. The purgatives which may be employed in the catarrhal cholera, in addition to calomel, are colocynth, jalap, or aloes, combined with some aromatics, or stimulants, or the drogue amère. The neutral salts are clearly inadmissible. Clysters may be used with the same view as purgatives; or stimulating medicines may be thrown into the large intestines, for the purpose of restoring the healthy action of their mucous membrane.

At the commencement of the epidemic in India, the *warm bath* was occasionally employed; but, although the utility of external heat has been universally acknowledged, yet this has been almost always found to be an inconvenient mode of applying it; and in some cases it appears to have been attended with positively injurious effects. Great expectations were at one time entertained of the benefit to be derived from the *vapour bath,* which was first recommended by Mr. Dalton, of the Madras Medical Establishment; but this also, after a fair trial, was abandoned. The same remedy, however, has been revived, with some appearance of success, in Moscow; and the manner of employing it is nearly the same as that recommended by Mr. Dalton in India, as will appear from the following description which has been transmitted to M. Alexander Tourgeneff from a correspondent in Russia. The patient is put in bed, under which are placed two or three basins with burning balls or heated bricks; vinegar, not too strong, is poured upon these, to produce vapours; the bed is covered, and carefully surrounded on all sides, so that the vapour may act upon the whole body of the patient, except his head, without penetrating through the bed-clothes. This is called a vapour bath; and a bed or machine has been already contrived for this operation." Now, as this remedy was not employed in Moscow until the disease had begun to decline, it is not improbable that the success which appeared to attend it was to be attributed to the less degree of malignancy which is known always to characterise those cases which occur when the malady is subsiding.

Experience has led medical men in India invariably to prefer *dry heat;* for which purpose, heated sand, or chaff, as already described, or bottles of warm water wrapped in cloth, may be employed.

It is not necessary to give an account of the various *empirical remedies* which have been recommended. They have either been ascertained to be entirely useless, or to be applicable only to particular cases. In a treatise on any disease, it is of most importance to point out correctly *the principles of treatment;* for it would be almost impossible to enter into details which would be applicable to all its modifications.

Cold drinks are clearly counter-indicated in catarrhal cholera; but there appears to be no reason why tepid drinks should be withheld. I would recommend a weak infusion of ginger, or ginger-tea, as it is called; and if this cannot be had, weak brandy-and-water may be substituted. I know that some practitioners have recommended cold drinks; but, if they have ever proved beneficial, this could only have been the case in the inflammatory or mixed form of the disease, for both theory and experience forbid their use in the catarrhal cholera.

It is unnecessary to describe the treatment of the inflammatory cholera, a disease so well known in all countries, that most physicians are familiar with it. I will therefore only remark, in order to contrast it with the catarrhal cholera, that the indications of cure are to remove the inflammation of the mucous membrane of the primæ viæ, to subdue the spasms, and to prevent congestion; the most effectual remedies for which will be free bloodletting, scruple doses of calomel, followed up by castor oil, frictions; and, in severe cases, in which there appears to be a tendency to congestion, blisters. Simple tepid drinks may be given to alleviate thirst, and stimulants are to be avoided.

In mixed cases, viz. in such as have inflammation added to catarrh, and the symptoms of which have been described in a former chapter, the treatment must be modified; and, the greater the symptoms of inflammation, the more guarded must we be in the employment of opium and stimulants. In such cases we must principally depend upon bloodletting, blisters, and calomel; opium being only given at the commencement, to repress the action of the stomach, and enable it to retain the other medicines. It must be remembered, however, that such cases often degenerate into the worst form of the catarrhal cholera, and must then be treated accordingly.

Recovery from cholera is generally rapid; and a proper attention to the state of the bowels is generally all that is required to ensure a speedy restoration to health. Cases do sometimes occur, however, which are followed by inflammation and organic derangement of the mucous membrane of the stomach and intestines, and demand the utmost skill and attention of the physician; but, as they form diseases distinct from cholera, and which are well known in Europe, their treatment does not require a description here. Happily they are not of frequent occurrence, and may be often prevented by a judicious treatment in the first stages of the disease.

It may be useful now to give a short connected account of how a common case ought to be conducted. It must be constantly kept in mind that the disease is so rapid in its progress, that minutes are of more importance in it than hours in most other diseases; and we must therefore bring our different remedies into operation as quickly as possible. Suppose a patient to be brought to us with symptoms of catarrhal cholera, (for instance, with vomiting and purging, a small pulse, cold skin, &c.) a scruple of calomel must be given to him, and must be washed down with fifty or sixty drops of laudanum in a little warm water, or with a dose of one of the stimulating or antispasmodic draughts, the prescriptions of which are given in the next page. Blood must be drawn by venesection, and by a large orifice, until an alteration be produced upon the circulation, indicated by the pulse becoming fuller, by the blood flowing more freely, and regaining its healthy appearance. A strong blister must be applied to the abdomen, and sinapisms to the legs and feet; and the external heat must be kept up by means of heated sand or chaff, in the manner already mentioned. Should the disease continue, or become aggravated, the pulse ceasing at the wrist, and the coldness or collapse increasing, we must then renew the scruple of calomel every hour, and accompany it with doses of the drogue amère, or of some stimulating draught; and our efforts to procure blood from the arm must be persevered in, or leeches applied to the temples. When the circulation begins to be restored towards the surface, the stools to be of a dark grey colour, and the secretion of urine to be renewed, we may consider the disease to have taken a favourable turn; and, when the dejections become green, we may generally consider our patient as safe. If this stage be accompanied by no reaction, all we have to do is to free the bowels from their diseased secretions, and from the stimulating medicines which had been previously given; which may be best effected by colocynth, jalap, or an infusion of senna with tincture of rhubarb. During the whole attack, the patient's thirst ought to be alleviated by a weak infusion of ginger.

Now I do not pretend to say that this treatment is applicable to all the varieties of the complaint. I have merely given it as an example of how one of the most frequent cases ought to be managed; but, under any circumstances, the practitioner who understands the principles upon which the treatment must be founded will experience little difficulty; and I need scarcely repeat, that the greatest difficulty he will probably have to contend with will be *want of time.*

When the attack has been fairly mastered, we have then only to attend to the convalescence of our patient; when it will be necessary to insist upon the use of the most digestible kind of food, and that in small quantity; to forbid cold drinks, and exposure to cold air; and to keep the bowels in a regular state. These measures will seldom fail to restore the patient soon to his usual state of health; and, in fact, it is wonderful in what a very short period of time (a few hours only in some cases,) is sufficient to rescue an individual from the most aggravated form of the disease, and to bring back all the feelings of health, accompanied only with debility.

PRESCRIPTIONS.

I. Mist. Camphor. lb. i.; Tinct. Cardam. ℥ss.; Spirit Ammon. Aromat. ℥i. M. Two ounces for a dose.

This mixture will be found well adapted for the low form of the disease: it is stimulating, and, at the same time, the ammonia having the property of dissolving the fibrinous matter which lines the alimentary canal, will have the effect of removing it, and of thus enabling the other medicines to act.

II. *Antispasmodic Draught.*

℞. Mist. Camphor. ℥ij.; Tinct. Opii, Castor, *aa* ʒss.; Spt. Ammon. Aromat. min. xx. M. *(Madras Report.)*

This ought only to be given in cases accompanied by severe spasms.

III. *Stimulating Tincture.*

℞. Fruct. Capsici. Annui, Zingiberi, *aa* ʒiv.; Alcohol dilut. lb. ij. M. et post sex dies cola.

Half an ounce may be given in warm water, along with the calomel, as directed in the text.

Should none of these medicines be at hand, simple warm brandy and water may be substituted.

Drogue Amère.

℞. Aloes Socot. lb. i.; Gum Myrrh, G. Mastich, G. Benzoes. ad. Colomb, *aa* ℥viij.; Croci Anglici, Rad. Gentianæ, *aa* ℥iv.; Eau de vie, lb. xxxvj.; Genèvre, lb. xij. M. To stand forty days, then filter through paper for use.

This medicine was much employed, and often with great success, at Pondicherry and Madras. It may be given in doses of an ounce, as soon as possible, and be repeated at short intervals. It possesses many of the properties which are likely to meet the indications of cure; being stimulant and tonic, and the purgative it contains being likely to excite the peristaltic motion of the bowels, and thus cause the other medicines to pass through, and the cholera secretion to be discharged.

TRANSACTIONS OF THE MEDICO-BOTANICAL SOCIETY OF LONDON.

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SARSAPARILLA AND SASSAFRAS.

Communication on the Sarsaparilla and Sassafras.

By John P. Grant, M.D.

My dear Sir: I have the pleasure to send you herewith specimens of sarsaparilla, which I found growing a few miles from Malacca; and, if cultivated, it would quite supersede the necessity of our importing it from Brazil, at so great an expense as we now do. In small quantities, it can be produced at Malacca, at the rate of a rupee a pound. I have tried it in a number of venereal cases, both primary and secondary, with as much satisfaction from its use as from any I have seen imported from Brazil. The characters of the plant are quite similar in all respects to that of Brazil. It is reared at Malacca by an old Portugueze doctor, who has the sole monopoly of it, and who has successfully reared and used it there for many years. Also a specimen of the Laurus Sassafras, which grows on the top of the hill on this island, and all along the Tennasserrin coast, in great abundance; so much so, that some beams of my house at Tavoy were made of it. It is stronger in flavour, and of a darker yellow, than that imported from America. As it can be supplied for the expense of cutting, we should never go to the expense of importing it from foreign colonies, when we have it in such abundance in our own.

The branch of a tree I send you is the Margosa, which I extensively use in practice. I brought it into notice during the Burmese war, as an application in ulcer. I have noticed its effects at some length in my "Medical Notes," now in the press. I procured the recipe for making the ointment of it from the head priest at Rangoon; it is as follows.

Tender leaves of the Margosa tree, dried and powdered, ℥ij.; fresh butter, ℥ij.; wax, ℥ij.; red precipitate, ℥ss. Mix them well, and put the whole into a chatty over a brisk fire for forty minutes, until it assumes a grey appearance. Wash the sore with nitric acid diluted with twenty parts of water, or a strong decoction of the root of the Margosa tree, and apply the dressing, spread on cloth, with a soft compress and rolling bandage, four inches wide, from the toes to the knee, if the ulcer is in the lower part of the leg; and it always has a most wonderful effect in producing healthy granulations.

The bruised leaves are also an excellent application as a fomentation in sprains and bruises, either in man or beast.

The pounded leaves, mixed with lime-juice and salt, are a certain and rapid cure of the ringworm.

I beg also to state, for the information of the Medico-Botanical Society of London, that the Amomum Cardamomum grows in great abundance and perfection in our lately ceded Burmese province on the Tennasserim coast, Tavoy: these can be furnished in seed cleaned from the husk for one shilling per pound.

To Lieut. Mat. Curling Friend, R.N., F.R.S.,
Corresponding Member Medico-Botanical Society of London.

EMPYEMA.

Cases of Empyema cured by Operation.
[*Gazette Médicale de Paris.*]

Empyema, following Variola, cured by Operation.

Case I. Pasquet Benjamin, twenty-five years of age, of a weak constitution, was admitted into the hospital at Tours, on the 1st January, with intense fever and variolous eruption. So great was the agitation under which he laboured, that he could not be kept in bed. The eruption was imperfect. At the end of January the following symptoms existed: short, difficult, and rapid breathing; a sensation of oppression and heaviness at the diaphragm; a sense of suffocation upon the least motion; constant cough; incapability of lying on the right side. The left side of the chest was sensibly distended; the intercostal spaces being much broader than natural, and projecting at the lower and posterior parts. The heart was thrown towards the right side, and its pulsations were perceptible at the inferior part of the thorax. When the patient moved, fluctuation and undulation were evident even to the sight and hearing, without having recourse to auscultation.

February 1st. The operation for empyema was performed by M. Herpin. The quantity of pus thrown out had so greatly depressed the diaphragm, that the incision was made between the tenth and eleventh ribs, at about an inch from the costal angle, where the fluctuation was most evident. An incision was made in a fold of the skin, about two inches long, and parallel to the direction of the intercostal space. The pleura being exposed, an opening of two or three lines long was made into it with a bistoury. Liquid, inodorous pus, mingled with serous shreds, at first escaped by jets, and with force. When about a pint was evacuated, the wound was dressed with a compress of lint, with holes in it to admit of still further discharge. For several days the bed of the patient was soaked with pus. The discharge became more and more fœtid, and blackened the catheter which was introduced each time the wound was dressed. The edges of the wound were tumefied and inflamed, and the patient was in pain and much agitated.

His face became pale and anxious, eyes sunken, skin of a dull colour, and there was great general depression.

In this state he continued until the middle of March; he was then directed to take kino and quinine in infusion, and an injection was thrown into the wound of decoction of kino, with a few drops of solution of chlorate of lime. From this time he gradually improved; the pus became whiter, thicker, and of good quality. In a few days there was little or no suppuration, and on the 2d of May the injections were discontinued.

Three days afterwards, the patient, having eaten more than usual, was attacked with shivering and fever, and spasms of the abdominal muscles, particularly on the left side. The face and feet were œdematous, and the oppression and pain of the side returned as violently as at first.

May 6th. A large quantity of bloody pus was evacuated by means of a catheter, which was now again discoloured. The injections were repeated; low diet. He again improved. The pus now seemed to concentrate itself at the bottom of the pleural cavity, and grumous and fibrinous clots still passed through the catheter.

Towards the end of May there was very little discharge, and now, in order to introduce the catheter to the bottom of the purulent cavity, (about four or five inches deep from the wound,) it was necessary to overcome a resistance, which appeared to depend upon adhesion of the lungs with the pleura of the ribs and diaphragm.

May 30th. The injections were discontinued; the kino mixture was again given; and a blister was applied to the nape of the neck, and kept open for some days. From this period the patient was free from fever or oppression, and he gradually grew fat, and his skin assumed a healthier colour.

On the 2d of July he was presented to the Medical Society of Tours. There was perfect resonance on the right side of the chest; the left side also gave a clear sound at the upper part, but at the inferior part, and around the spot where the operation had been performed, the sound was dull. It is to be observed, that this patient never expectorated pus, although he had coughed a good deal, and his breathing was impeded.

CASE II. *Empyema after Measles: Operation; Cure.*

This was the case of a child seven years of age, who had had measles, and been much neglected some days after the appearance of the eruption. Catarrh followed, and subsequently empyema, which caused a projection of the thorax near the inferior angle of the left scapula. M. Herpin made an opening with potassa fusa, and afterwards threw in injections with barley-water and honey. The suppuration continued for six weeks; the wound then closed, and soon after the little patient complained of oppression and sense of suffocation. The wound was again opened, and suppuration went on for several weeks. The parents confessed that they had formerly laboured under syphilis. M. H. prescribed the following medicine: Syrup of sarsaparilla, with deuto-chlorate of mercury, in appropriate doses. In a short time the suppuration diminished, the wound cicatrized, and the child was restored to health. The side of the thorax which had been affected did not, however, increase in size as in the other, and this young person, who is now (1832) twenty-three years old, is a little deformed in shape, although in the enjoyment of good health.

In both these cases the empyema arose from the same cause—repercussion of an exanthematous disease. They were both treated by making an opening which permitted the air to enter freely into the chest, and both did well. Here the resemblance between the two stops. It did not appear that the child experienced such severe symptoms as the man; but the latter had a relapse, and was only saved by the treatment described. M. Herpin makes but few remarks upon these cases: he merely states, that he prescribed mercurials because he has always found them efficacious in removing the bad effects of the morbillous virus.

Case III. *Empyema after several Attacks of Peripneumonia: Operation; Cure.*

A soldier, æt. twenty-six, after several attacks of peripneumonia, was affected with empyema, which caused a projection below the inferior angle of the right scapula. He entered the hospital the 27th March, and on the 23d of April an opening was made into the chest. An ichorous discharge of pus followed, which afterwards became so fetid that the patients all left the ward when he was dressed. Fever succeeded, which placed the patient in danger for several days. He took internally decoction of bark; and an injection of the same mixture was used, with a small quantity of a solution of chlorate of lime. The whole surface of the body was afterwards covered with a miliary eruption; the suppuration diminished, and was less fetid; the eruption died away; the fever subsided. He became convalescent, and left the hospital perfectly cured on the 22d of May.

To these three cases, for which we are indebted to M. Herwin, we add the following, from the *Gazette Scientifique de Seine-et-Oise;* which is still more remarkable, on account of its various complications, and the length of time the discharge continued.

Case IV. *Symptoms of Constitutional Syphilis; Caries of the Ribs; Acute Pleuro-pneumonia; Empyema. Operation, followed by a Discharge for two years; Cure.*

M. R., a cavalry officer, æt. twenty-eight, of lymphatic constitution, had frequently had syphilis. He was admitted into the

Hospice de Versailles on the 19th August. He was treated for abscesses in different parts of the body, and went out convalescent November 6th. On the 22d he was again admitted, on account of a tumor situated on the left side of the chest, above the sixth rib, which had appeared without any assignable cause. It was red, soft, and painful. Forty leeches were applied in two days, but the pain was not relieved. On the third day an incision was made, and it was ascertained, upon the introduction of a sound, that there was caries of the rib. The pain ceased for a very short time, but returned on the following day. There were now dyspnœa, dry and frequent cough, striated expectoration, and in fact every symptom of intense pleuro-pneumonia. He was bled, and the next day was much exhausted and insensible. Revulsive remedies were employed. The right side of the chest and the neck were attacked with erysipelas. Delirium, and increased difficulty of breathing.

Notwithstanding this complication of severe symptoms, the pulmonary affection was soon relieved, and the expectoration was easier. The respiratory sound was heard in the right lung, but in the left it was feared that there was either congestion or effusion; and the subsequent dilatation of this side of the chest removed all doubt upon this point.

As soon as the inflammatory symptoms had entirely subsided, a caustic issue was made. When the slough separated, above two pints of yellowish serum were discharged, in which was floating concreted albumen, which, by blocking up the opening, prevented, at moments, the exit of the fluid. A plug was afterwards inserted into the wound, which was covered with linen with holes made in it. In the course of the next few hours about ten ounces of fluid were evacuated; but, although the patient was much relieved, the suppuration continued fetid and abundant: even the expectoration was purulent. Injections of solution of chlorate of lime were employed, and immediately after the patient complained of tasting the chlorate in the throat. Reduced as he was to a state of emaciation, he was now attacked with acute articular rheumatism, which rendered it necessary to bleed him several times. The pains in the joints were removed, but inflammation of the periosteum remained upon the fibula and tibia. The former went off; but the latter terminated in an abscess, and left the bone exposed to the extent of four or five inches. In six weeks this wound was healed. The two abscesses in the thorax, namely, that of the carious rib, and that from the empyema, lasted a much longer time.[*] Nearly two years elapsed before the discharge from the latter ceased, but ultimately the patient left the hospital perfectly cured.

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[*] When the ribs are carious in cases of empyema, the cure is always difficult and tedious. A modern writer indeed informs us that, when the inside of the rib is extensively carious, or when the caries is near the junction of the bone to the spine, the fistula is incurable. (LASSUS, Pathologie Chirurgicale, t. i. p. 128, edit. 1809.) Another surgeon of great experience recommends us to endeavour to separate the diseased bone, either by cutting it away or by the trephine. (PELLETAN, Clinique Chir., t. iii. p. 253.)—EDITORS.

It did not appear that the venereal taint of this patient rendered mercurials necessary. He recovered, notwithstanding every circumstance appeared unfavourable: his temperament, his previous diseases, and the various complications of his case. The appearance of the fluid discharged was also bad; for it has been remarked, that there is a greater chance of effecting a cure in empyema when the fluid is purulent than when it is serous.[*] Both the skilful surgeons who have recorded these cases employed the caustic potash to give exit to the fluid. At no very distant period, abscesses of the pleura were considered as totally distinct from ordinary abscesses. The principal object was to prevent the admission of air; and, although the old opinions upon the subject are now a good deal modified, the use of the caustic issue in such cases has not been before mentioned. We perceive, however, that this mode of making an opening is not more dangerous than an incision by a bistoury.

CRITICAL ANALYSES.

Quæ laudanda forent, et quæ culpanda, vicissim,
Illa prius, cretâ; mox hæc, carbone, *notamus*.—Persius.

An Inquiry into the Causes of Respiration; of the Motion of the Blood, Animal Heat, Absorption, and Muscular Motion: with Practical Inferences. By James Carson, M.D., Liverpool. *Second Edition.*—8vo. pp. 447. London: Longman and Co.

Physiology could scarcely afford a more interesting or important series of investigations than those which Dr. Carson has proposed to discuss in the several essays included in this volume. The title-page is full of promise, and from those which follow, though not all that we could wish, much information may be gathered.

Dr. Carson has long been well known to the public as an industrious and original experimenter, and accounts of his researches have from time to time appeared in various periodical works; they have been subjected to severe examination, and the justice of most of his conclusions subsequently admitted. The present work is not merely a reprint of the former treatise, nor of the successive monographs alone, but the whole matter has been re-arranged, various parts rewritten, several added, and it may now be esteemed the matured exposition of the author's ideas on the very important subjects on which it treats, viz. *the causes of respiration, the motion of the blood, animal heat, absorption,* and *muscular motion;* neither are the *practical inferences* added without their value.

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[*] Sir Astley Cooper states that he has only known one operation for hydrothorax terminate successfully. This he considers by no means surprising, as the collection of fluid is the result of disease of the thoracic viscera, the heart, or lungs, &c. (Lectures, vol. ii. p. 385.)—Editors.

A brief account of the structure of the thorax introduces the first inquiry, and, "as the causes to which the ascent of the diaphragm is attributed in the following pages are altogether different from those to which that movement has hitherto been ascribed by physiologists; as those causes are supposed to discharge an important part, not only in the process of breathing, but also in the circulation of the blood, and in other functions of the living machine," the author, in the first place, endeavours to shew the utter improbability of the commonly accepted doctrine. He says,

> "When the diaphragm is contracted, as is acknowledged to be the case in inspiration, the oblique and transverse muscles of the abdomen are supposed to be in a state of relaxation; and, by permitting the abdominal viscera to protrude, to allow an easy descent to the diaphragm. When however the diaphragm becomes relaxed, either with or without the consent of the will, the abdominal muscles, either in consequence of sympathy, association, or of the stimulus of volition, contract in their turn, and, by pressing the abdominal viscera against the lower or concave surface of the diaphragm, cause it to assume a higher elevation in the cavity of the chest.
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> "The abdominal muscles and diaphragm are considered in this explanation to act as antagonists; and it is by the alternations in the contraction and relaxations of these muscles and the diaphragm that the function of respiration is supposed to be performed.
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> "That the actions of the abdominal muscles should perpetually and invariably alternate with those of the diaphragm, through sympathy, habit, or association, and generally without the intervention of the will, is a doctrine which appears so incomprehensible, that it will not slightly obtain the assent of the inquisitive mind. Great support has been supposed to be derived to the hypothesis of such a connexion subsisting between the muscles in every respect distinct, from the alternation in the movements of the ventricles and auricles of the heart. But the aid which this doctrine is supposed to receive from the analogy of the heart is in this case fallacious; for, by referring to the account which will be given in the succeeding part of this work, of the action of this organ, it will be found that the alternations to which allusion has been made are not produced

through sympathy, habit, association, concatenation, or any of that tribe of causes, but that they are the result of a mechanical necessity.

"But this doctrine, so improbable in its own nature, receives little or no support from observation. The muscles of the abdomen are not generally during expiration in that tense state, which their contraction to the extent supposed would render necessary. Nor do the abdominal viscera appear to sustain greater pressure during expiration than at any other period.

"In cases of great inanition and collapse of the bowels, the contraction of the abdominal muscles, by bringing those muscles nearer to the direction of straight lines, passing between their attachments, the brim of the pelvis and the lower ribs, would not push the viscera of the abdomen against the diaphragm; but, by enlarging the cavity of the belly to a capacity beyond that which these viscera required, would draw them from the lower surface of the diaphragm. When the bowels are found protruded in consequence of extensive wounds in the belly, respiration proceeds for some time without more interruption than may be supposed to be derived from pain. But the diaphragm in these cases could not be elevated by the pressure of the abdominal muscles, which, during their contraction, would more easily displace the bowels to a greater extent than elevate the diaphragm. In cases of impaling, and in the numerous experiments which have been made upon the lower animals, it is found that respiration may be performed for a considerable time, after the abdominal muscles have been divided, or altogether removed. After death even, when, in dissection, the abdominal muscles have been divided, and the viscera have been taken from the cavity of the belly, the diaphragm is observed to preserve a great convexity, attended with a drum-like tenseness, towards the chest.

"If we consider how improbable it is, that a perpetual and invariable alternation in the actions of the abdominal muscles and diaphragm should proceed from the supposed causes; that a doctrine so incredible in itself receives little support from observation; and that the effect, which is supposed in all cases to arise from this cause alone, is certainly produced in circumstances in which that cause cannot operate; we may conclude with the utmost safety, that the contraction of the abdominal muscles is not necessary to the elevation of the diaphragm, and that, in general, it has no share in that effect." (P. 4.)

The elasticity or resilience of the lungs, is the cause to which Dr. Carson attributes the ascent of the diaphragm.

"The substance of the lungs is powerfully elastic. This is admitted by all anatomists. If a piece of the substance of the lungs be taken while its structure is still perfect, and stretched into double or treble its ordinary length, it will, upon the removal of the distending force, resiliate briskly into its former dimensions. This property was confidently to have been presumed from the cartilaginous and ligamentous structure of the bronchial vessels.

> "From the moment that the first inspiration is drawn by the infant, to the close of life, and after it, so long as the structure of the frame is uninjured, the lungs are swelled into a forced or unnatural state of expansion; that is, they are distended into dimensions far more ample than those which they would assume, if all force or restraint was withdrawn from them. The power by which they are kept in a constant state of forced dilatation, is unquestionably, what has been stated, the weight of the atmosphere." (P. 13.)

A variety of experiments are detailed, by which it has been endeavoured to ascertain the power of elasticity, or the degree of resiliency, that the lungs possess. We shall content ourselves with quoting one as an illustration, referring to the volume for the more full account.

> "On the same day another bullock, with a less capacious chest, was made the subject of experiment with the same apparatus. Water was poured into the apparatus, as in the preceding instances, till it stood sixteen inches above the level of the water in the globe. An opening was then made into the abdomen. A fold of the fleshy part of the diaphragm was then drawn down on each side, and care being taken that no part of the lung was included in the fold, it was cut into. The sound of a current of air pressing through the openings into the chest was distinctly heard, and the water in the upright tube rose instantly to the height of eighteen inches above the level of the water in the globe. The diaphragm, before the openings, was still tense, and slightly concave towards the belly; but after that, it became lax, wrinkled and flat. Some additional water was poured into the apparatus; but we were prevented in this case, as in the preceding, from ascertaining the amount of the force requisite to distend the lungs to the dimensions which they usually occupy in the living animal, by the deficient capacity of the glass globe.
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> "By these experiments I think it is clearly ascertained, that the spring of air compressed by a column of water of a foot and a half high, is not equal to the resilience of the lungs of an ox, at the usual stage of their dilatation." (P. 25.)

Similar experiments on dogs, cats, and calves, were attended with similar results, and corroborated the previously expressed opinion; and the author concludes this subject by observing,

> "In the various examinations which my opinions have undergone, the existence of this power has been admitted, and the claim to priority in the detection and application of it freely conceded to me; but it has been contended, that the amount of it, in some instances, is inconsiderable, and consequently, that the effects ascribed to it have been greatly overrated. By these experiments, the power has been proved to be greater than my anticipations even made it, and fully adequate to all the important offices which I have ventured to assign to it. From a defect in the apparatus, the extent of the power in question could not be ascertained in the lungs of

oxen and animals of their size; but it was proved to exceed considerably the force necessary to support a column of water of a foot and a half in height above its level. In calves, sheep, and in large dogs, the resiliency of the lungs was found to be balanced by a column of water, varying in height from one foot to a foot and a half; and in rabbits and cats, by a column of water varying in height from six to ten inches." (P. 30.)

Next follow the inferences drawn from these experiments, which include the *new theory* of the causes of the ascent of the diaphragm, and, as a consequence, the general causes of respiration.

"It has been stated, that, during the life of the animal, and after death, until an opening shall have been made into the cavity of the chest, the diaphragm assumes the form of a cone, and that the causes of this phenomenon would be afterwards pointed out. The brief explanation which is now to be given of this appearance will afford, at the same time, a perspicuous view of some of the important purposes to which, in my opinion, nature has turned the elasticity of the lungs.

"While the chest is in a sound state, a balance of atmospherical pressure ponderates against the external surface of its walls; or these are pressed inwards more than they are pressed outwards, by a given weight. The shell of the chest possesses sufficient stability to resist this pressure without changing in any considerable degree its form and capacity at all parts, except at the base, or diaphragm; which being muscular, pliant, and of a more extensive area than that of the transverse section of the chest, is, in consequence of the greater weight sustained by its outward or inferior surface, necessarily pressed, or, in popular language, sucked upwards in the form of a cone. The extent of this cone will be necessarily regulated by the extent of the area of the diaphragm, compared with that of the area of the transverse section of the chest. But the contraction of the muscular fibres of the diaphragm diminishes its area, and reduces it to a nearer equality with the area of the transverse section of the chest, and thus diminishes the magnitude of the diaphragmatic cone, and in an inverse proportion enlarges the boundaries of the chest. But the diaphragm, at the succeeding relaxation of its fibres, is restored to its former dimensions, becomes capable of being swelled into a larger cone, and, by this encroachment, reduces the boundaries of the chest to their former limits.

"Two powers are therefore concerned in regulating the movements, and in varying the dimensions and form of the diaphragm, the elasticity of the lungs, and the contractile power of the muscular fibres of the diaphragm. Of these powers, the one is permanent and equable, the other variable and exerted at intervals. The contractile power of the diaphragm, when fully exerted, is evidently much stronger than its antagonist, the resilience of the lungs; but the latter, not being subject to exhaustion, takes advantage of the necessary relaxations of the former, and rebounding, like the stone of Sysiphus,' recovers its lost ground, and renews the toil of its more powerful opponent.

"Breathing is in a great measure the effect of this interminable contest between the elasticity of the lungs and the irritability of the diaphragm.

"The cause of the successive contractions of the diaphragm, in those cases at least in which the will is not concerned, seems to admit of the following explanation. A permanent and invariable load is sustained by its lower surface. By this load the relaxed muscular fibres become stretched to a degree which at length becomes painful and stimulating. To relieve itself from this irksome burden, the diaphragm is roused to contraction; but this contractile power, agreeably to the laws of muscularity, is soon exhausted, and, falling into a quiescent state, allows the painful and stimulating distension of the relaxed fibres of the diaphragm to be again renewed. From the irksomeness of this condition it relieves itself by a fresh contraction. Thus, by the alternated superiority of two powers, on the balancing of which life itself depends, the chest is successively enlarged and diminished, and air alternately expelled and inhaled.

"Such is the process of respiration, so far as it depends on the movement of the diaphragm; but, according to a provision very common in the animal machine, this important office is not intrusted to one class of organs alone, but has a double class assigned to it. The objects obtained by this provision are, in the first place, that by the united action of both classes, the function may, in the most healthy state, be more efficiently performed; and, in the second place, in case of the destruction or deficiency of one class, it may be still continued wholly or chiefly by the other. The second class of organs, as they may be called, discharge their office by alternately increasing and diminishing the width of the chest. This class comprises the intercostal muscles, or short muscles, which pass obliquely between the ribs, and have one insertion in the lower edge of one rib and the other in the upper edge of that next below it, and several of the muscles of the chest; and the antagonists of these agents, the cartilages, which unite the ribs to the breastbone or to each other, and the lungs." (P. 30.)

It will be seen, from the foregoing extract, that the subsidiary uses of other parts are not overlooked by Dr. Carson, although the resilience of the lungs, and the contraction of the diaphragm, are esteemed the principal causes; and, in some arrangements of the mechanism, the secondary organs chiefly perform the duty.

"It has been stated that a double set of organs belong to respiration. It happens very frequently in this country, perhaps more than in any other, that the lungs become diseased to such a degree as to be deprived of their elasticity. This may happen to one lung, and not to the other, and to one portion of a lung, while the rest remains sound. When both lungs are deprived of their elasticity, the diaphragm is deprived of the power by which, in ordinary circumstances, it is elevated, and from that time ceases to have any share in the process of respiration. In this case, which occurs when the lungs become completely tuberculous and schirrous, respiration is performed solely by the intercostal and other muscles of the chest, and their only remaining antagonist, the elasticity of the cartilages of the ribs. It occurs occasionally, particularly in old age, that the cartilages of the ribs lose their elasticity, by being converted into inelastic bone. In that case, breathing is performed solely by the play of the diaphragm. In some animals, one set of organs are used almost solely, or more extensively than the other. In animals of the chase, respiration is chiefly performed by the movement of the diaphragm. This is evident from the violent action of the flanks. The lungs of these animals are large, powerfully elastic, and little subject to disease. In the human species, again, the second set of organs are much employed, which is evident from the fascinating heaving of the female chest.

"In consequence of the descent of the diaphragm, and simultaneous elevation of the ribs, it is evident that a part of the pleura pulmonalis, that was opposite to, and in contact with, a part of the pleura costalis in the stage of expiration, will not be opposite to, and in contact with, the same part in the highest stage of inspiration, but will be opposite to a part considerably lower in the chest; and this difference between the parts of apposition in these stages will increase with the descent of the chest. Hence arises a sliding motion of the surface of one pleura on the surface of the other pleura; a motion which will be more extensive the nearer an approach is made to the diaphragm. Hence it happens that, in the healthy state of the organs of respiration, particularly in the healthy state of the lungs, no adhesions can take place between the pleura.

"The lungs themselves, like the organs of respiration, of which they constitute an important part, are double, so that, if one lung be rendered inefficient, by disease or otherwise, respiration may still be performed by the aid of the other lung only. Hence it happens that one lung may be completely collapsed without much apparent inconvenience to the animal. I found, by some experiments which I made on animals some years ago, that the air may be admitted freely upon the lung of one side, without the destruction of life, and indeed with perfect safety. This proves that the mediastinum, or membrane placed between the two lungs, and dividing the chest vertically, is sufficiently tense and strong to be a wall to either of the lungs, too powerful to be overcome by the resilient effort of that lung, and to secure to it a space sufficiently ample to enable it to perform the purposes of respiration. A very striking and satisfactory proof of this, and indeed as conclusive a one as has yet been adduced, of the extent of the power generated by the elasticity of the lungs in a state of health, is supplied by the manner in which the Jews kill the animals intended for their food. It is well known that this people will not eat the flesh of any animal that has the blood in it, or that has had any disease or malformation of its organs. A mode of killing animals different from that in use with Christians, and a peculiar examination for ascertaining the health and perfection of the organs of the animal, are practised by them. To separate the blood as completely as possible, the operation of slaughtering commences with bleeding, which is done by dividing all the vessels of the neck, including the windpipe. In this situation the animal bleeds to death; a tedious, and apparently a very cruel process. The operator, who is generally the priest, or some person appointed to this sacred duty, then proceeds to the examination of the viscera. The abdominal cavity is first freely opened, and examined. He next proceeds to examine the state of the thoracic organs: for this purpose he makes a large incision through the diaphragm on the right side. On the first occasion of this kind at which I was present, an ox happened to be the victim. Upon the incision being made through the diaphragm, a loud sound, like that produced when a large drum is struck, was heard, for which I was not prepared, and which startled me like the unexpected firing of a pistol. This sound was occasioned by the rapidity with which the air rushed through the orifice to occupy the space left by the collapse of the lung. The sound being in this instance rather louder than usual, was regarded by the operator as a proof of the soundness of the thoracic viscera. He next perforated the diaphragm on the left side: a sound, though not so loud as that following the first incision, was distinctly heard at some distance. The extent of the sound in the first instance proved the force and rapidity with which the lung collapsed; the sound in the second instance, of diminished extent, proved that the mediastinum had yielded to a certain degree, but that it had preserved its position so far as to check the force derived from the elasticity of the lung upon its left side, after that lung had been slightly collapsed, and to preserve that lung in a condition fitted to carry on the process of respiration.

"It is chiefly to the motions of the diaphragm that the respiration is to be ascribed; though, as has been stated, in some animals, and especially in man, a considerable share of this office is to be attributed to the intercostal muscles. Those animals which are remarkable for swiftness and perseverance in the race scarcely employ the intercostal muscles, but use the diaphragm almost solely in breathing.

"The action of the abdominal muscles, though not necessary, may occasionally be useful in respiration. When any substance lodges in the bronchi which is too tenacious to be separated, or too ponderous to be elevated by the powers commonly employed in respiration, the contraction of the abdominal muscles will increase the pressure against the lower superficies of the diaphragm, and augment the velocity and the force with which the air passes through the bronchi and the windpipe.

"There may be also many diseases of the chest in which the action of the abdominal muscles may be serviceable in respiration.

"In no circumstances almost, during health, can it be supposed that the aid of the abdominal muscles is required to elevate the diaphragm, as the elasticity of the lungs is of itself sufficient for that purpose; and, unless it were counteracted by the residue of contractile energy subsisting in the muscular fibres of the diaphragm even during their relaxation, the cause might often be found too potent. In the act of sneezing, when the diaphragm, after a full contraction, is suddenly seized with a kind of paralysis, it is probable that the unresisting fibres are protected from the injury which they would be in danger of incurring, in consequence of the violence of the jerk to be sustained in their relaxed state from the inequality of pressure, by the synchronous and almost involuntary contraction of the muscles of the larynx, fauces, and mouth. By this contraction the free exit of the air is resisted; the air in the chest, confined and compressed, checks the collapse of the lungs, and of consequence the ascent of the diaphragm.

"This defence, however, is not always effectual. Sneezing has been known to be suddenly fatal, in consequence, as has been supposed, of the rupture of a blood-vessel in the chest, but more probably of the rupture of the diaphragm itself." (P. 38.)

These physiological researches suggested the idea that a surgical operation might be serviceable in certain thoracic diseases, and especially in pulmonary consumption; and, although no very beneficial effects followed the two operations that were performed, still, as being founded on rational principles, however bold and energetic the practice may appear, we shall quote the details entire, and recommend them to serious consideration.

"As satisfactory proof was supplied by repeated experiment, that an animal could live by using one lung only in respiration, it was imagined that the knowledge of this might be applied to the cure or relief of some diseases, particularly of consumption. It is generally believed that the ulcers, from which matter is discharged in consumptive cases, are prevented from healing, as well as the same kind of ulcers would do in other parts of the body, by the agitation to which they are exposed in respiration.

"In addition to that cause, another powerful one was supposed to be derived from the structure of the lungs, and from their position in the living body. In that state, the elastic substance of the lungs being always on the stretch, would be distended beyond its natural limits; if therefore the fibres of which the lungs were composed were divided, they would resiliate from each other, and the wounded surfaces could not again be brought into contact.

"It appeared to be practicable to remove those two causes of the impediment to the cure of wounds, by reducing the diseased lung to a state of collapse. This would evidently be done by admitting the air into the cavity of the chest, by an opening through the side, and preserving the passage to it free for a sufficient time. The lung would by those means be reduced to a state of quiet collapse, and the elastic fibres separated by the wound would be brought together. The lips of the divided surface would be brought into contact. The disease, if in one lung only, as frequently happens, would be cured by this process alone.

"It was found, that if a lung which had been reduced to, and kept in, a state of collapse for some time, and if the opening, through which the air had been admitted for reducing it to that state, were allowed to heal, the lung would, in consequence of the absorption of the air contained between the two pleuræ, be again dilated to a contiguity with the internal surface of the chest; and that, if the other lung were diseased, it might then be with safety reduced to a state of collapse; depending upon the lung now healed, for the performance of respiration; and treated as the former had been. A paper containing those speculations was read in the Literary and Philosophical Society of Liverpool, where it produced a considerable sensation, and raised hopes, which, alas! have not been realised, both in several members of the medical profession, and other members of the society. An opportunity occurred some time after, without any solicitation on my part, of putting the matter to the test of experiment.

"James Sloane, Esq., an eminent merchant of Liverpool, the last of five brothers, the other four having died of consumption a few years before, had returned from the West Indies, to which he had gone for the purpose of trying what a change of climate might do in his case, in the last stage of consumption, which he knew to be incurable from any known remedies. Soon after his return, he heard of the paper to which I have alluded, and soon became determined of having the operation, which I had suggested as a possible means of giving relief, performed in his own case. It was done on the 26th of Sept. 1822, by Mr. Bickersteth, an eminent surgeon of this place, in presence of the late Dr. M'Cartney and myself. An incision calculated to admit air freely into the chest, was made between the sixth and seventh rib. As the sound usually heard upon an opening being made in the chest, and produced no doubt by the rapid passage of the air through the opening, was not perceived in this case, it was suspected that the lung did not collapse, and that an adhesion had prevented the entrance of the air. It was not deemed advisable to make a further examination for that purpose at that time; a tent was inserted into the wound to prevent an adhesion of the sides, by the first intention. At our visit, next day, when the wound was examined, our suspicion of adhesion between the lungs and the chest at the place, was confirmed at the first aspect; the discharge from the wound had not found access into the cavity of the chest, which it ought to have done in the position of the body, but was oozing out of the wound; an examination by the finger ascertained an adhesion of the lungs to the ribs, both above and below it; a probe found admission to a greater length across in both directions, but at length met with an obstacle. Mr. Sloane suffered no inconvenience from the operation, but thought his chest somewhat relieved. This might happen from the adhesion being rendered by it less tense. The orifice was kept open, and he suffered no inconvenience from it till the day of his death, which happened about a month after the operation, and which had been deferred fully as far as it was suspected it could be, at the time he arrived from abroad. Examination after death, shewed adhesion to have taken place between the pleuræ completely at the diaphragm, along both sides of the mediastinum, and along the chest, every where except at the spaces between the ribs, where the fingers might be admitted as into the fingers of a glove. The lungs filled the chest, and shewed no tendency to collapse. Two large abscesses were found, one in each lung. The substance of the lungs was tuberculous and hard throughout. Adhesion, so universal, did not in this case appear to arise from any previous inflammation, to which these adhesions are generally attributed; for, though I attended him regularly in every complaint to which he was subject for many years, I never had reason to suspect any inflammation of the chest; but, in my opinion, from the tuberculous affection of the lungs, by which they were deprived of all elasticity, and of consequence of that sliding motion above described, which occurs in health, between the pleuræ, and which I conceive to be the chief cause of the absence of adhesion between these membranes. The diaphragm was deprived of its antagonist, the elasticity of the lungs. The customary movement of that organ must long have ceased, and in its quiescent state it had readily grown to the pleura pulmonalis. It was observed long ago, by that great ornament of the medical profession, Boerhaave, of Holland, to be in phthisical affections a bad symptom, if the abdomen did not protrude in inspiration, or in other words, if the diaphragm did not descend. The cause of the unfavorableness of this symptom, of which Boerhaave could have no just knowledge, can now be satisfactorily explained.

"After the death of Mr. Sloane, the attention of myself, and indeed of the medical profession of Liverpool, was directed more earnestly to the condition of the lungs in consumptive cases; and it was found universally, when patients had died of tuberculous phthisis, that the lung affected did not collapse in its whole extent, and that adhesions had uniformly taken place between the pleuræ. It often happens that only one lung is diseased; in that case, no adhesion will be found to have taken place in the side occupied by the sound lung. If the lungs were tuberculous, but not altogether solid; if some elasticity still remained, the adhesions would be confined to the upper part of the chest, where the sliding motion is at all times slightest, and leave the lower part of the sides and the diaphragm free. Adhesions in the chest, I would conclude then, do not at all times arise from inflammation, but perhaps most frequently from a disease in the fabric of the lungs. It is very evident that the operation which was performed on Mr. Sloane could have no good effect in the case of tuberculous consumption. Whether there are any other kinds of phthisis in which it might be serviceable, will afterwards be examined. Let us inquire, now, whether any thing further could be done in such a disease as that of Mr. Sloane; I am of opinion that something more might be done, and that a dependent opening might be made through the ribs, for the discharge of the matter. If it is supposed the operation had not stopped at the division of the pleura costalis, but had made an opening into the abscess through the substance of the lung itself, no injury could evidently arise to respiration by such an operation. In this state of the lung, it signified nothing whether the air passed through the windpipe or through holes in the sides. The lung could not be collapsed. I anxiously waited for an opportunity for making this operation; I resolved not to make the proposal, but would encourage it in case it came from the patient himself, or some of his friends. An opportunity of this kind occurred in an intelligent merchant of this town, of the name of Johnstone. He was well acquainted with the nature of the operation that had been performed on Mr. Sloane. I explained to him what appeared to me requisite to give it any chance of success. Finding himself on the brink of the grave, he proposed that the operation should be performed to the extent that I wished. Mr. Bickersteth, who, it is only fair to state, had shewn as great zeal in this scheme as if he had been the original projector, was selected as the operator. The patient's own surgeon, Mr. Samuel M'Culloch, was, at the request of the patient himself, present. It was agreed that the operation should be proceeded in after the same manner that it had been done in Mr. Sloane's case; and, if matters were found in the same condition as they were in that case, to cut freely into the substance of the lungs, taking care that the large blood-vessels were avoided. When the first part of the operation was performed, matters appeared to be exactly as they were in Sloane's case. This was explained to the patient, but he declined having any thing more done at that time. At a subsequent visit of Mr. Bickersteth, at which I was not present, the patient consented that the operation might then be completed, which Mr. Bickersteth, taking advantage of the present disposition of the patient, instantly complied with. An incision was made into the lung. A pretty profuse hemorrhage took place, which the operator had considerable difficulty in stopping. No abscess had been reached, no purulent matter was discharged, the disease pursued its course, and in a few days terminated with the death of the patient.

"The appearances on dissection were exactly the same with those which had been exhibited in Mr. Sloane's case. The lungs adhered everywhere to the substances that were in contact with them, except at the interstices between the ribs. The incision which was made on the right side had nearly reached a large sac full of purulent matter. It may be asked, what benefit could have arisen to the patient if this sac had been opened, and an outlet afforded to its contents through the side? I answer, great. In the first place, a dependent opening would have been afforded to the matter in the sac, from which it would have been discharged as soon as formed, instead of accumulating, lodging, and constantly filling the sac. It is well known how advantageous such openings are in parts externally situate. The matter, so far as that sac was concerned, would have been discharged without coughing: the painful and exhausting nature of the process required for discharging it in this manner is well known. The sores in that lung would have been placed in a situation as favourable for healing as the same sores could have been in any other part of the body. Nor would it have been necessary to have confined the operation to one side. The breathing on the side on which the operation had been made would have been rendered less imperfect, insomuch as it would have been relieved from a load of morbid and acrid matter.

"As I have before remarked, since the lung in this situation could not collapse, it matters not whether the air entered into the chest through the windpipe, or through the hole in the side. If coughing, and a discharge of matter by that distressing process, still continued, it was with certainty to be inferred that there was a collection of it in the other side. An outlet to the matter on this side might be easily afforded, in the same manner as had been done in the other, without increase of danger, and with the same relief to the respiration. If no matter were discharged by cough, it was to be inferred that the other lung was sound, and no further proceeding necessary.

"It will readily occur to any one, and appear as an objection to the operations which have been stated, that the matter of a diseased lung is not contained in one sac, but in a multitude of tubercles, without having communication with each other. It may be remarked, that the matter from each of these sacs finds its way, sooner or later, into some of the ramifications of the windpipe; and, as those ramifications have a communication with each other by their common stem, a communication between this stem, or indeed any of its branches, and the outlet in the side, would secure the discharge of matter as certainly through this outlet as through the windpipe; and, a communication being once established, it might be rendered more free, as the discharge was encouraged to take that course.

"In cases of empyema on one side of the chest, a dependent opening for the discharge of the matter contained between the pleuræ would be of indisputable benefit; and, as it might be ascertained by symptoms rendered more plain by the use of the stethoscope, on what side the matter was contained, and as empyema arises frequently in constitutions in which the lungs are otherwise little diseased, complete cures might be often expected.

I remember the case of a lady who fell a victim to this disease, who, I think, might with certainty have been cured by an opening made into the chest. She discharged periodically, I think thrice a day, about a gill of matter. This matter was raised at once by a violent paroxysm of coughing, with great sense of suffocation. In the intervals she was tolerably well. After death the body was examined: the left sac of the pleura was filled with matter; the left lung was small and dense. It was supposed by the surgeon that the lung was wasted by the discharge of matter; but I suspected at the time that the smallness of the lung was occasioned by its complete collapse, for a long time the air being totally expelled from the bronchi. The matter found its way into the windpipe through its left branch, and when all the chest was full to the extent of its reaching this orifice, it was discharged in the manner stated. She was a lady of a very sound constitution. The disease had originally been the effect of a simple inflammation of the chest.

"No disease has been inflicted upon mankind that is more to be deplored than consumption, whether we consider the number of its victims, the length, and frequently the severity of their sufferings, the age at which they are usually selected, or the moral and intellectual qualifications with which they are commonly endowed. It crops the flower of the human race. In no way, therefore, could man be supposed to approach more nearly to the exercise of the divine functions, or to render a higher and more endearing service to the world, than by discovering a cure for this disease." (P. 51.)

We think Dr. Carson far less conclusive in his theory of *the motion of the blood*, especially of the venous circulation, than in his exposition of the mechanism of respiration; but, as our limits will not allow us to enter into a full critical analysis of his views, we rather leave this essay untouched, than treat it in a cursory manner; and this we are the more especially inclined to do, as the subject has been so often brought before the notice of our readers, and from some of the controversy upon the disputed points having been carried on in this Journal. [*See* Dr. ARNOT's *paper, published in the volumes for* 1827, *et passim.*]

Much ingenuity, we allow, has been displayed by Dr. Carson in opposing the objections which have been offered to his theory; but, notwithstanding all he has said, we are among those who think "that the supposed use to which the elasticity of the lungs is converted, that of aiding the full expansion of the heart, is unnecessary, and therefore not likely to be so employed: at all events, that it cannot be considered indispensable; because the blood circulates in fishes, in birds, and in the fœtus in utero, in which lungs are either altogether wanting, or are not elastic; or, if elastic, are so situate. that their elasticity can have no avail in the way supposed." (P. 196.)

The want of synchronism between the acts of respiration and the motions of the heart; the power of rendering the respiration slower and more quick, and of suspending it for several seconds, without varying or suspending the actions of the heart, we think insuperable objections to the doctrine; and the respiration of birds seems to us an irrefragable proof of the correctness of our views. Dr. Carson himself appears conscious of its force; for he says,

> "Birds, however, are not only placed in the same element with the mammalia, but are accustomed to ascend into regions in which the air is much rarefied, and, in point of specific gravity, still more remote from the blood which they carry in their veins than that which the latter breathes. The reasons by which the want of elastic lungs in fishes is accounted for, will not apply to them. An adaptation to the aërial residence which these animals have assigned to them requires a peculiarity of structure, and a different series of powers. The same functions are necessarily performed after a different plan. To enable the reader to comprehend fully the view which we have of the method by which nature has contrived to supply the office performed by elastic lungs in the mammalia, would require a more detailed explanation than can be properly given at this place. I have therefore to request the reader to suspend his judgment till the respiration, and other functions of birds, shall have been considered; assuring him, in the meantime, that it is confidently hoped that a satisfactory cause will be shewn for the deviation from the structure of the mammalia; and that, in that deviation, proofs will be adduced of some greater power being required than that derived from the simple relaxation of the heart, for securing the expansion of that organ in all animals in which a fluid circulates of greater specific gravity than that in which they are immersed." (P. 198.)

Courteous as we wish to be, we cannot, if pressed, "suspend our judgment;" and on the present evidence it would, we confess, be given against our author. When, however, he brings forward the "*satisfactory cause*" which he "*confidently hopes*" may be shewn, we shall be ready to review the verdict, to grant him a new trial, and, if "*satisfactory cause*" be shewn, to reverse our sentence.

Clinical Lectures on the Contagious Typhus, epidemic in Glasgow and the Vicinity, during the Years 1831 *and* 1832. By RICHARD MILLAR, M.D., Senior Physician to the Royal Infirmary, and Regius Professor of Materia Medica in the University of Glasgow.—8vo. pp. 184. Brash and Co., Glasgow; Black, Edinburgh; Longman and Co., London.

(Concluded.)

THE observations on prognoses are concluded with some remarks on those derived from sleep and age. Of the first the author says,

"That this important function of health should be always more, or less, impaired, by the numberless pains, or uneasy feelings, that harass the sick in typhus, was necessarily to be expected, but the amount of the evil is different, in different individuals, and we judge of the danger by the degree. If rest be little interrupted, it is needless to say that the sign is propitious, and if entirely wanting, no less the contrary, the latter circumstance invariably adding to the exhausting power of fever, and, of course, robbing the patient of that reserve of strength which might, otherwise, enable him to bear up under the pressure of so protracted a disease. Besides, almost all the symptoms are sufficient, individually, to banish sleep, and when sleep returns, it may be hailed as a signal that these are surmounted, or, at least, have abated of their violence. On all these accounts, the state of sleep, as forming an important element in prognosis, is always an object of particular scrutiny in the chambers of the sick.

Here, however, I must inform you, that on this point you cannot always trust to the report of the sick themselves. Say that you inquired of a patient how he rested during the preceding night, he will not unfrequently answer, that he never shut an eye, though you are informed, and informed truly, by the nurse, that he passed the whole time in a state of quiet and comfortable repose. There is here no intention on the part of the sick person to deceive you, he is, in fact, deceived himself. He labours under the influence of a particular species of delirium, or coma, not unusual in the disease, which has been not unaptly termed *coma vigil*, by authors. This singular symptom may perhaps receive some elucidation from the remarks that follow. Without entering here into any intricate discussion concerning that curious phenomenon of living bodies we are accustomed to designate by the name of sleep, and of which a rational theory is alike wanting to metaphysics, and to medical philosophy, it will be sufficient to remark, that one of the principal means by which we distinguish our waking, from our sleeping hours, is, by the vivacity, or strength, of the impressions of sense, as they flow directly from their immediate organs. contrasted with the faintness, or indistinctness, of the same impressions as afterwards converted into their corresponding ideas, and reflected back by the imagination, and memory, two faculties, be it remarked, that lose but little of their activity, and vigour, during the time of our nocturnal repose. The same criterion, too, during health, prevents us from confounding dreams, even the most vivacious, with actual occurrences. But this power of discrimination is occasionally lost in disease. In typhus, memory, and imagination, are no less disordered than other sensorial functions, and their particular perversion here seems to consist in this, that the ideas they present to the mind are so preternaturally, or morbidly, vivid, that they pass with the patient for the genuine and original impressions of his external senses; and hence, under this delusion, he is induced to deny that he slept at all, during the night, but, on the contrary, to maintain that he passed every hour broad awake. His whole train of thought was one continued dream, but a dream so impressive, that it was readily mistaken for reality. Such sleep, however, imperfect as it may be, is better than none. It at least secures rest to the voluntary muscles, and exempts from the tædium and misery of entire wakefulness. As amendment proceeds, this excited state of the imagination, and memory, gradually wears away, and along with other functions, they recover their former soundness, so that this impediment to the natural state of sleep no longer continues. A return to the former enjoyment of rest, indeed, may be viewed as, at once, an effect, and cause, of convalescence. As the first, it shows the declining state of the disease; as the second, it exerts a kindly influence over the remaining symptoms, more especially renovating, and restoring, the lost, or languishing, powers of digestion." (P. 25.)

On the second he observes:

"It is a curious and certain, but hitherto unexplained fact, that at the beginning of life, typhus commits much fewer ravages than afterwards: indeed, at this era of existence, it seems almost entirely harmless. At what particular year, however, this exemption from the danger of fever is enjoyed in the greatest perfection, when it commences, or when it terminates, I am unable to inform you; yet I think it may be safely enough affirmed, that previous to seventeen, a patient, comparatively speaking, runs very little risk from this malady. Of this assertion, some no less satisfactory than striking proof, may be adduced. Thus, in the Cork Fever Hospital, nine hundred and fifty-five patients under seventeen years of age, were treated by Dr. Barry, and only six died, or 1 in 159 and a fraction. I confess, when I first read this statement, it appeared to me so extraordinary, that I was led to suspect one of two things, either that the cases had not been all instances of genuine fever, or that there was some error in the printed numbers. Now, however, I believe in the correctness of the account implicitly, and you have all witnessed full corroboration of it in our own wards. Here you have seen treated two hundred and sixty patients, under seventeen, one hundred and ninety-six males, sixty-four females, and the deaths were only six; four among the former, two among the latter. But of the patients thus lost, not above two or three at most were cases of genuine unmixed fever, so as to be properly counted in the catalogue of casualties." (P. 27.)

Whether the Glasgow contagious typhus differed essentially from the fevers known by the same denomination in other places, we shall not pretend to determine. From the symptoms detailed, we should presume that it did not; and, from our author's caution in ushering in his account of its treatment, we were led to surmise that he thought similar treatment would not be approved for similar diseases in other places; that some parts of it will be discommended by many can be easily foreseen.

"We come now to the most important part of our subject,—the cure, or, more correctly speaking, the treatment of typhus.

"Here I think it necessary to premise, that the directions I am, at present, to lay before you, relate solely and exclusively to our low contagious typhus; how far they may be applicable to other forms of fever described by authors, I offer no opinion.

"The treatment of low typhus naturally divides itself into two branches, one, comprehending the measures to be followed, at the commencement of the malady, the other, those that may be called for after it has been fairly formed.

"Of the first set of measures the purpose is of the highest importance, no less than to strangle, or extinguish, the disease at its outset, and, of course, avert all future danger. Two plans chiefly have been resorted to with this view, one, the early administration of an emetic, and diaphoretic, the other, the shock of the cold affusion. With respect to the first, the process I have found most advantageous is the following. About eight o'clock in the evening, I order the emetic, generally ipecacuanha, after the operation of which, the patient is enjoined to bathe the feet and legs in warm water, during at least a quarter of an hour, or twenty minutes, and upon retiring to bed, he is to swallow a large dose of Dover's powder. Sweating soon commences, and it is to be supported and encouraged by tepid diluents. This method, when administered early enough, I have found singularly successful. My chief experience of it has been among the nurses of our Infirmary, when they happened to catch the contagion. With them, I have seen it, repeatedly, dissipate every symptom of fever.* Upon visiting them next morning, I found, that after profuse sweating during the night, the pulse had come down, that the headach, with the pains of the back and limbs, had vanished, that the tongue had regained its moisture, and that nothing remained but a little debility; in short, that all those threatening signs had disappeared, that, if left alone, would have soon matured themselves into a regular and genuine typhus. It is almost needless to say, that this happy result is most looked for only when we have the fever to deal with at its very commencement." (P. 32.)

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* "The young gentlemen who serve as clerks in our Fever Hospital rarely, if ever, escape the disease, and no wonder, considering the duty they have to perform. This duty consists, first, in taking a history of each case as it enters the house; an employment which causes them to linger long in near contact with each patient, and many such histories must often be taken the same day; then they must regularly visit all the wards thrice daily, besides frequent additional calls, both by day and night, so that they live almost constantly in an atmosphere of contagion. Two of them, who acted successively in this capacity for me, Messrs. Paxton and Howie, and to whose zeal in acquiring knowledge of their

The account given by Mr. Howie is very similar to that of Mr. Paxton, and the treatment there described proved equally successful.

"Another plan resorted to for eradicating typhus fever in its first stages, is by the shock of the cold affusion. This method, however, is more circumscribed in its use than the other, since it is available only when the skin is at once preternaturally hot, and free of moisture, a conjunction not often observable in our low typhus, even at the beginning. With these requisites, however, it is a most powerful remedy, and that it has at different times extinguished fever, is a fact established by the testimony of the most trust-worthy practitioners. Of this plan I have myself little or no experience. I tried it twice only, but both times without success. Like our other expedients for shortening fever, it is too often delayed till the time for using it has elapsed, or till the disease is so firmly fixed as to defy its influence.

"It thus appears that there exists in fever what may be called a preventive stage, a period during which it remains assailable by medicine, may be effectually checked in its career, or may be utterly

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profession, humanity to the sick, and general good conduct, I have great pleasure in bearing this testimony, put the prophylactic plan above recommended to the test of experience in their own persons, and fortunately experienced its full benefit. Both of them warded off, by means of it, the fever that would otherwise have infallibly ensued; Mr. Paxton twice over, or on two several occasions. I subjoin the narrative of each of my young friends, in his own words:

"Dear Sir: On the 6th of August last I was seized, in the morning, with an unusual feeling of languor, and difficulty of directing my mind to my usual occupations; this was attended with considerable nausea, which continued the whole day, and I was unable to eat any thing at the usual meal times. Next morning, after having passed a very unquiet night, I awoke with severe headach, pain of back and calves of the legs, with a pulse of 108, and white tongue. I remained in bed the whole day, but at four o'clock P. M. I was seized with severe rigours, which continued for some time. A scruple of ipecacuanha taken immediately produced full vomiting. At night, after fifteen grains of Dover's powder, preceded by a hot bath, I fell into a profuse perspiration, and next morning felt considerably relieved; my pulse had fallen to about eighty, tongue still white. A calomel and jalap purge operated freely; and next day, with the exception of slight debility, all disagreeable symptoms had disappeared.

"I had a similar attack in December last, which seemed to have been arrested by the same treatment.—I am, dear sir, your obedient humble servant,

"John Paxton.

"*G. R. I. August 9th,* 1832."

extirpated. This important but fleeting era, however, for it is only of a few days' duration, is too generally suffered to pass away without advantage, unheeded, and unimproved. The precious opportunity it affords of averting the whole future calamities of the disease, is thus completely lost. The practitioner is seldom, or ever, consulted till the after stage, when it has become too firmly entrenched to be dislodged, or when it has inseparably fastened itself upon its victim. It will then, too often, run its course in spite of every obstacle we can oppose, and this brings us to the second branch of our present subject,—those remedial means which are left us, after this change, or after the malady has thus assumed what might be properly enough termed its permanent form, or condition. Before coming to details here, I think it necessary to premise the two following axioms, together with their two corresponding corollaries.

"1. That typhus, after it has reached a certain stage, will proceed onwards in its course (a few rare instances excepted,) in spite of every obstacle medicine has yet devised to check its career; but that, at the same time, it is part of its nature to decline spontaneously, to exhaust itself, or to wear itself out by degrees.

"2. That fever is a disorder of considerable duration, and that while it endures, the whole powers of life lie prostrate before it, more especially appetite, digestion, and assimilation, so that often for ten, or even twenty days, little or no new blood can be created, or prepared, for the purposes of the circulation, while secretion, and excretion, going on continually, to greater, or less, extent, must act as a constant drain; and hence that on all these accounts, more or less languor, exhaustion or debility, must be looked for, sooner, or later, as an essential, or inseparable consequence, or concomitant, of the disease.

"From the above two axioms flow the following two corollaries, as appears to me, alike founded on common sense.

"1. That since it is beyond our power, generally speaking, to stop the current of the fever, little else will often remain for the practitioner than simply to lie by, and watch the symptoms, administering what aid he may to such as appear the more troublesome or dangerous.

"2. That, founding on the second axiom, he abstain from all inordinate depletion, more especially of blood, so as not to draw too largely on that fund of strength which ought to sustain his patient, and which seems requisite to bear him up through the usual contingencies, and exhaustion, of so protracted a disease.

"Building on the soundness of these preliminaries, gentlemen, I proceed now to more particular directions. Let us suppose, then, we have a typhus patient presented to us, and let him be an hospital patient, as over him we have the most absolute control, and let us consider what measures are to be pursued. We commence with the following. His head is first to be shaved, and his clothes being stripped off, and immediately immersed in a tub of water, so as to be completely covered, and surmounted by the fluid, he is to be thoroughly washed and cleansed in the warm bath, and, after being dried and furnished with clean body linen, he is finally to be put to bed within some large, comfortable, and well ventilated ward or chamber. We then proceed to open his bowels, a precaution never to be neglected during any period of the disease, and, as he will be generally harassed more or less with flying pains of his limbs, and with broken rest, at night, we order a dose of Dover's powder at bedtime, both to remove his uneasy muscular feelings, and to conciliate sleep. Such, gentlemen, are the initiatory measures, or common routine, I have been long accustomed to pursue. If, after all this, at our next visit, there appear no untoward symptom; if the pulse be neither very rapid, nor very feeble; if there be neither unnatural heats nor chills; if there be little headach, and no delirium; if, though the patient cannot eat, he neither purges nor vomits; if the pains of the back, and limbs, be only slight, or moderate; if sleep continue pretty regular, or be easily commanded by an opiate, I hold, that for the present, at least, little else is to be done. We may give the patient, from time to time, a little wine to relieve his languor, and it will more speedily recruit his lost strength, if it be blended with his food. Such, gentlemen, is the line of practice I would recommend to you, in all those that may be called the milder cases of typhus. Caution, and forbearance, are to be your leading maxims, here, in spite of all dashing practitioners, and all dashing books. Typhus is an enemy, you may rest assured, often to be most effectually opposed by the Fabian system of tactics, and he will be the most successful combatant, as well as best deserve the eulogy of the Roman poet, who, while he remains at his post, ready for the encounter, yet prudently abstains from all ill-timed and unnecessary attacks:

Tu Maximus ille es,
Unis qui nobis cunctando restituis rem.

"Dropping here, however, all figures of speech, gentlemen, I am happy to say that I have it in my power to lay before you the most complete practical proof of the truth and propriety of this precept. The treatment it recommends has not only been put to the test of experiment, but has been tried on a great scale, and, however simple, has been crowned with the most perfect success. You will find by the journals that no less than 516 patients have been treated according to this plan, that is to say, in these cases nothing seemed to be required, and accordingly nothing was done; we simply lay by, and watched the disease as it proceeded in its course. The only exceptions were, that in fifteen of the males, leeches were applied, and in five others, a blister; among the females again, neither leeches nor blisters were found necessary, while in the whole 516, setting aside these additions, the sole remedies employed were an occasional laxative, and an opiate at night. If success be the criterion of practice, the result has been most satisfactory, for out of all this multitude there was not so much as a single death."*

The precepts for the ordinary treatment of the severer forms of typhus, in which Dr. Millar does not differ from other writers, we shall pass over without extract; for, however proper in clinical lectures to students, they would look too much like truisms for our pages. But, as his estimate of opium is somewhat at variance with the common rules of practice, we shall let him state the benefits of its early exhibition.

"Among other symptoms originating from febrile disorder of the common sensory, none of the least is the privation, or disturbance, of sleep, and we are now to consider what remedies are available against this common evil of fever. For the nocturnal repose we are accustomed to enjoy, we seem chiefly indebted to that state of exhausted excitability, or torpor, which is produced, during the day, by the various and unceasing impressions of the external senses, the fatigue of our voluntary muscles, and the exhaustion produced by the ordinary affairs, or occupations of life, joined to habit, and exemption from any particular pain or uneasiness; but of these the influence is either lost, or suspended, during typhus, and hence wakefulness continues, when rest should supervene. We fly for aid to the medicines called narcotic; of all these, by far the principal is opium, a drug at once anodyne, and hypnotic, or comprising in itself the two requisites we desire,—the power of abating pain, as well as inducing that state of exhausted excitability, or torpor, which may be said to constitute, if not the essence, at least the prelude, of sleep. The utility of such a medicine cannot but be apparent. It is, indeed, a remedy of the highest importance, and, from the most ample experience, I am now so thoroughly convinced of its benefit, that, generally speaking, I would no more omit a dose of it at bedtime, than I would neglect opening the bowels of my patient by a cathartic. I say this advisedly, gentlemen, and I say it strongly, because I have observed some late writers on fever too much disposed to under-rate the virtues of this valuable article. Those who have prescribed it on a great scale, as in hospitals, will form a juster estimate of its powers, and I have often been struck

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"* Those who are fond of jokes against our profession will have room here for indulging their humour. They will say, and with some plausibility, that many among those to whom we administered numerous and various medicines died, while all those who took nothing, or next to nothing, recovered. The remark is undoubtedly true, and it shows that fever will often run itself out, and terminate favourably, with little or no assistance from drugs. Still, however, we must not give up the importance and utility of our art. The previous discipline of the warm bath and shaving the head, to which all our patients are subjected, I consider of no small avail for mitigating the symptoms, and still more the removal from their own filthy and ill-aired abodes to a clean bed, and a well ventilated and comfortable apartment. Neither must we forget the maxim, that there is often more skill displayed in withholding than in prescribing a medicine."

by the testimony borne in its favour, by the poor inmates themselves of our fever wards, though in their own homely phrase, as well as pleased by the thankfulness they expressed for the relief it had afforded.[*]" (P. 43.)

We fully agree with Dr. Millar, that, excepting where local disease requires it, bloodletting is not to be recommended in low fevers; but we cannot accord with him, in his neglect of all other tonics and stimuli but wine and whisky.

"There will, no doubt, in every instance, be more or less disturbance of the heart and arteries, but if it do not exceed in amount what seems inseparable from the febrile state, we hold it sufficient simply to watch the patient, trusting that the disorder of the circulation may gradually subside, or wear itself out, like the other symptoms. But we are not always to look for such mild cases. In too many instances the pulse flags, becomes either immoderately quick, or alarmingly feeble, for the most part both at once, and we must then endeavour not only to restore its energy for the present, but to counteract its weakness, or tendency to sink, for the future. While on this subject, I must not forget again to warn you against the common opinion that every case of contagious typhus must always necessarily commence as a synochus, and must, on that account, be treated, at first, as an inflammatory disease. That such contingency may occasionally exist, I do not deny, but I hold it of rare occurrence; and, unless there appear some unequivocal sign of inflammation, either in the head, chest, or abdomen, whatever the pulse may be, you must carefully beware of all inordinate depletion, more especially of blood. Only have a little patience, and you will soon see the benefit of this caution. Merely watch your patient for a day or two, and you will find the hard feeling of the artery, you so much dreaded, gradually disappear, and to be succeeded by the usual typhoid beat.

"The leaning of the disease, in fact, is all on the other side, and the danger we apprehend, except in very rare instances, is not from morbid excitement, or inflammatory vigour, but from collapse, or excessive weakness. It is against this last condition accordingly that we direct our efforts. The means thus resorted to by practitioners, for counteracting the debility of fevers, have been very various, at different times. Among the old Boerhaavians who had a prejudice against the bark, contrayerva, and serpentary, were the principal remedies. Others administered cinchona, at first by itself, afterwards with wine, but both the compound, and its first ingredient, fell into disuse, though the employment of bark has again been revived, of late years, under the more effectual, and convenient, form, of sulphate of quinine. Camphor has been a favourite of many. Cascarilla, angustura, and canella alba, have been occasionally prescribed, under the impression, that from their union of bitter and aroma, they might be of the same efficacy with the old serpentary, and contrayerva. I have repeatedly tried them all, and have found them of sufficient utility. Indeed, I have no doubt that any one of them will often conduct the disease to a prosperous termination. For many years back, however, I have laid them all aside, and trusted entirely, or almost entirely, to the use of wine. This remedy, in fact, possesses exactly the two powers necessary for correcting the pulse in typhus; restoring its strength in the mean time; and, as a prophylactic, preventing it from sinking afterwards. It, besides, possesses conveniences and advantages that other febrifuges want. Thus, it hardly ever disagrees with the stomach, a circumstance of great moment in a disease like fever, where the organ is so apt to be ticklish, or irritable. But its grand qualification consists in this, that you can derive from it every degree of stimulation you please, from the highest to the lowest, so as to command every grade of excitement you may deem requisite for your patient, and that, merely, by adjusting the doses, and abridging, or prolonging, the intervals of its exhibition. We have thus put into our hands not only a most powerful, but at the same time a most manageable instrument against fever. As to the mode of administration, I shall merely mention the plan I have long followed myself, and which, by experience, I have found the most advantageous. Unless great debility occur early in the disease I rarely prescribe it till the eighth, ninth, or tenth day, and then order it only in small quantities, and at considerable intervals, as half a glass or one ounce, every three hours; and I may here remark, once for all, that it must be managed in such a manner, that the succeeding may always support the influence, or impression, of the preceding dose. Should the artery assume a firmer beat, though still feebler than that of health, I make no augmentation, but proceed with the same allowance. If the pulse, on the contrary, continue too feeble, I increase the quantity, or shorten the interval of exhibition, ordering a glass every two hours, or half a glass every hour, or a whole glass every hour. For the most part, however, I rarely exceed twelve glasses, or an ordinary bottle, during the day and night. I must here warn you against a circumstance that might otherwise mislead you, it is this: it not unfrequently happens that when wine is taken in these large doses, though it invigorates the pulse to a certain extent, yet it does not raise it enough, and you might be apt to suppose that the medicine is given in vain. This, however, is not the case. It is keeping the disease at bay, and you have only to persevere, when, in a day or two, you will reap every benefit you desire. Occasionally, however, wine, even in considerable quantities, affords too weak a stimulant, and its power must be assisted by the addition of alcohol, under a stronger, or purer, form, as of our ordinary spirits, rum, whisky, or brandy. Half a glass of either may be added to each or every second dose of port, sherry, or madeira. If still the pulse flag, join sulphuric ether, as ten or fifteen drops, or more, to each exhibition of the other remedies; or interpose this powerful diffusible during the intervals. Should wine produce acidity, or otherwise disagree, spirits must be substituted in its room; and it is needless to add, that every expedient must be tried to render whatever liquor you use agreeable to the stomach and palate. If possible too, or unless nausea forbid, some light aliment should be joined to your remedies, as beef tea, calf-foot jelly, or panada, with the addition of aromatics." (P. 50.)

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[*] "I cannot convey a better idea of this gratitude, than by repeating what often passed, when I questioned them, particularly on the day after admission, how they rested the preceding night; the answer has, innumerable times, been, 'Never better, sir; it is the only night I have had any sleep since I took it,'—the fever."

"Before I quit this subject, I must not forget to tell you, that there are certain symptoms in low fever, according to many practitioners, which forbid the use of wine, and render it either useless or hurtful. What are esteemed the principal among these are a hot skin and dry tongue. There will be found here much fallacious reasoning among authors. If it be merely asserted that a fever is more difficult of cure with these symptoms than without them, the fact may be readily admitted, but they do not necessarily contraindicate the employment of wine. If the surface be moist as well as hot, the remedy is perfectly admissible, as I can assert from frequent trials, and if it be hot without being moist, the obstacle may be easily removed by sponging. But, in fact, a hot skin is rarely an accompaniment of our low typhus. With respect to dry tongue, I would rather it were moist, yet I give wine every day of my life, notwithstanding the circumstance, should the pulse demand it, not only without evil or aggravation of the disease, but with the most decided benefit to the sick. Cases often occur, indeed, in which there is no choice. If you find your patient lying supine, passing his stools and urine in bed, and the pulse all but extinguished at the wrist, you will not do your duty unless you endeavour to restore, and support, him, by the plentiful use of the most powerful diffusibles, be the state of the tongue, and the skin, what it may.

"Among the London practitioners, ammonia, and the camphor mixture, separate, or conjoined, are favourite medicines, and without doubt they are of considerable efficacy. The first-named article has this advantage, that it determines to the skin, an influence always salutary in fever, but its stimulation is less permanent than that of wine. The best forms, I think, are either the simple or alcoholic solution, or that joined to some of the volatile aromatic oils, both of course to be administered in small, but repeated doses. Though in the above remarks a very high estimate has been given you of the febrifuge virtues of wine, you must not therefore suppose that I regard it as an absolute panacea, or that every person must recover, provided it be used in sufficient quantity. I trust I need not warn you against so gross an absurdity. Though much, no doubt, may be done for typhus by early and judicious management, yet universal immunity from its ravages can never be expected. Like every other epidemic, it must always have more, or fewer victims. Such is the baneful potency of typhus poison over the vital organs, more especially, it is probable, over the universal nervous tissue, that in many instances, prescribe as you may, no remedial means will avert the fatal event. Hence an invidious charge against wine, by saying that many of those die who have used it the most liberally. The fact is without question true, but the inference does not follow from the fact. No argument indeed can be more futile, since the same accusation might be brought, with equal strength, against every remedy our art can boast, even those of the most tried and acknowledged efficacy. But is a medicine to be reckoned useless merely because it is not omnipotent? Are copious bloodlettings, for example, with other depletions, and the antiphlogistic regimen, to be stigmatized as of no avail in inflammation, because every sthenic disease does not immediately fly before them, or because many persons are known to die under their administration? The same reasoning precisely is applicable to wine in typhus. The extent to which we are obliged to carry the stimulant plan in the one instance, and the depleting system in the other, merely shows the violence, and danger, of the disorder against which we have to contend. The amount of the whole is what may be readily conceded, that the best directed efforts of our art are too often nugatory, and that diseases are not unfrequently stronger than our remedies." (P. 53.)

We have already expressed our determination not to enter the wild regions of speculation with which the controversial section of this volume is filled; neither do we feel inclined to offer an opinion upon the political strictures contained in the Appendix: therefore, having given as copious an analysis of the practical part of these lectures as our limits would allow, we shall conclude our notice by recommending the work to the perusal of our younger readers; for it is evidently the production of one who has advantageously employed the extensive opportunities he has had of studying and practising his profession.

BIBLIOGRAPHICAL NOTICES.

The Principles and Practice of Obstetric Medicine, in a Series of Systematic Dissertations on Midwifery, and on the Diseases of Women and Children. Illustrated by numerous Plates. By DAVID D. DAVIS, M.D., M.R.S.L., Professor of Midwifery in the University of London. Parts XX and XXI. 4to. London: John Taylor.

WHILE we freely admit that these parts of Dr. DAVIS's work contain a good deal of practical information, we still have to lament the existence of the fault to which we have before adverted, namely, a diffuse and inappropriate style of writing, which savours more of the efforts of a novel-writer to amuse his readers, than of a learned physician to instruct them. In the twentieth part, the subject of Hysteria is continued. We are far from denying that even simple cases of this very perplexing malady may require the use of the lancet; but ample experience convinces us that, in the very great majority of such cases, depletion must be had recourse to with the greatest caution. We cannot therefore agree with Dr. Davis as to the propriety of taking away from "twenty to five-and-thirty ounces of blood" in hysterical patients, even though they be "plethoric subjects," and the convulsive paroxysms very violent. To the abstraction of a much smaller quantity of blood we might perceive no objection, for the purpose of relieving any symptoms of determination of blood to the head; but we hold the doctrine to be quite unsound, (and the practice founded upon it fraught with mischief,) which teaches us that the "tremendous spasms" of hysteria are likely to be subdued by bloodletting. In no cases are these "spasms" more violent than in the persons of weak, delicate, and very pale-faced women, who would not bear the loss of blood at all, and much less of such a quantity as that mentioned by Dr. Davis. It is very true that he refers particularly to "plethoric" patients, but still the mode in which he states his opinion might lead the young and inexperienced practitioner to fly to the lancet as a general means of relieving the violent convulsive attacks which almost always occur in severe examples of hysteria, whatever may be the constitutional temperament or state of health of the patient. "Neglect of efficiently active practice (i. e. bleeding freely,) on the first accession of the disease, is no doubt a principal reason why the prognosis in hysteria is, as it actually is, so generally, and almost universally unfavorable."

Such is Dr. Davis's statement. Now, to us, the information is quite new that the prognosis in hysteria is "generally and almost universally unfavorable." We thought, and we think still, that the prognosis in hysteria is *almost always favorable*. In many cases there may be ample reason to fear that the disease may be tedious, and somewhat intractable, but the life of the patient is rarely in danger; and therefore the prognosis is as rarely unfavorable. We doubt indeed whether cases of simple hysteria ever end fatally. The patient may be long a sufferer, and may labour under the most complicated and apparently alarming symptoms; but, as a general fact, it certainly may be said that these symptoms disappear, more perhaps from the efforts of nature than the effects of the best directed medical skill, and the patient recovers her ordinary health and strength.

In cases of chronic hysteria, Dr. Davis recommends, and in our belief with propriety, the adoption of much the same line of treatment as in amenorrhœa. The moral management of such cases is also of the highest importance. The patient's mind should be occupied and amused. "Temporary change of residence; travelling; visiting attached and much respected friends; an extension of intercourse with cheerful and virtuous society; a constant succession of agreeable and useful employment; and, above all, daily exercise, preferably either on foot or on horseback, in the open air; will be found to furnish us with a pretty ample choice of materials for our moral prescriptions."

Upon the more formidable complications of hysteria Dr. Davis makes many very useful remarks, respecting both their nature and treatment.

Nymphomania is the next subject Dr. Davis discusses. In the parts of the work before us his comments upon this malady are not terminated.

A Treatise on the Composition and Medical Properties of the Mineral Waters of Buxton, Matlock, Tunbridge Wells, Harrogate, Bath, Bristol, Cheltenham, Leamington, Malvern, Isle of Wight, Brighton, and the Beulah Spa, Norwood. With instructive Observations on the Drinking of the Waters, and the Use of the several Baths. By Sir CHARLES SCUDAMORE, M.D., F.R.S. &c. Second Edition, corrected and much enlarged.—8vo. pp. 215. London: Longman and Co.

WE have no doubt but that this little work of Sir C. SCUDAMORE's will "take," both with the public and the profession. To the invalid who travels to any of our fashionable watering-places, and who is inclined to be his own patient, it will be very useful; and to the physician it will be equally so, as he is frequently asked to decide upon the real or supposed, the positive or comparative virtues of the mineral waters at the various places mentioned in the title-page. In 1819, the author visited several of the most remarkable watering-places in this country. The state of their mineral springs was the natural object of his inquiry, and he soon found reason to suspect the fidelity of the existing sources of authority respecting them. "Books were defective in describing the number of the springs in many places, and more or less erroneous as to the chemical properties of most of the waters." The additions to the present edition of the work consist of an account of the waters of Bristol, Brighton, and the Beulah Spa. Sir Charles was assisted in the chemical analysis of the different springs by Mr. GARDER and Mr. CHILDREN.

A brief geological sketch is given of the places he visited; the chemical analysis of each mineral water is then stated, and their medical properties are described.

We do not perceive that any point is omitted upon which the purchaser of such a work would seek for information. Sir Charles indulges in no exaggerated account of the superiority of one particular water over another, but assigns to each its fair and honest value: and this, we must observe, is a merit which works upon such topics rarely possess, especially when they proceed from the pen of some medical resident, who is of course very quick in discovering the great efficacy of the mineral springs of his own locality.

The Teeth, in relation to Beauty, Voice, and Health: being the Result of Twenty Years' practical Experience and assiduous Study to produce the full Development and perfect Regularity of those essential Organs. By JOHN NICHOLLS, Surgeon-Dentist.—8vo. pp. 134. London: Hamilton, Adams, and Co.

THIS work is sufficiently free from technicality of expression to be read with interest by the public, for whom indeed we presume it to be especially intended; while at the same time the information it contains will furnish the medical student with many facts respecting the teeth which he ought to possess. It is divided into three chapters, and each chapter into three sections. In the first chapter many good practical remarks are made on the teeth in relation to beauty, voice, and health. In the second, the structure of the teeth; the temporary teeth; first dentition; the permanent teeth, and second dentition, are considered. The topics discussed in the third chapter are toothach, its cause, and proper treatment; anodyne cements; removal of decay; stopping the teeth; tooth-powders; and artificial teeth.

The style in which the work is got up does infinite credit to the publishers: we have never seen a more attractive looking medical volume.

REPORTS
FROM HOSPITALS AND MEDICAL INSTITUTIONS.

Cases of Catarrhal Cholera. By ALEXANDER TURNBULL CHRISTIE, M.D.

Darwar; 14th May, 1825.

CASE I. Lingah, male convict, æt. twenty-two, was admitted into hospital at five A. M. with frequent vomiting and purging. His evacuations consisted of a greenish-coloured serum, in which floated a number of white flakes. Features collapsed; hands and feet cold; pulse extremely small. Complained of no pain or uneasiness. Took several doses of laudanum, several five-grain doses of calomel, and some pepper-water. Hot sand was applied to his hands and feet, and a blister to his belly. He sunk rapily, and died at eleven A. M.

Dissection. Peritoneal coat of the intestines of a rose colour. Mesenteric veins not larger than usual. The mucous membrane of the stomach and intestines appeared thicker than usual; was pulpy, easily lacerated, and was lined with a thick, white adhesive mucus. Liver natural, but contained a good deal of dark-coloured blood. Gall-bladder contained healthy bile. Dark-coloured blood in the left cavities of the heart. Brain not examined.

Darwar; 15th May, 1825.

CASE II. Royapah, male convict, æt. twenty-nine. Six A. M. was attacked very early this morning with severe vomiting of a whitish watery fluid. Has vomited four or five times since he came into hospital. No purging. Is very restless; pulse quick, and very small; extremities cold, countenance anxious, complains of thirst.—Emitt. sanguinis e brachio ℥xvi. Capiat Calomel gr. v. quaque semi-hora. Capiat stat. Tinct. Opii, gr. xv. Admoveantur empl. episgast. abdomini, et arena calida manibus et pedibus. Habeat subinde paululum Infusionis Piper.—Nigri tepidæ pro potu.

Five P. M. Two veins were opened, from which fourteen ounces of dark-coloured blood were procured. No vomiting since he took the laudanum. Has taken five doses of the calomel. Bowels not yet moved. Pulse very small; skin cold.—℞. Calomel, Extract. Colocynth. comp. āā gr. x. Misce, fiat bolus stat. sumend.

16th. Seven A. M. Feels much better. Has had two watery yellow stools. Pulse continues small; hands and feet cold.—℞. Infus. Quassiæ ℥ij.; Alcohol. dilut. ℥ss. M. ter in die sumend.

17th. Convalescent.

Darwar; 17th June, 1826.

CASE III. Nursumloo, æt. twenty-five, sepoy 5th regt. N. I. Half-past six A.M. Was attacked with vomiting about four o'clock this morning; but it appeared to him of so trifling a nature, that he delayed coming to hospital till now. Features much collapsed; is very weak; pulse thready, scarcely perceptible at the wrist; extremities cold; tongue clean.—Emitt. sanguinis e brachio ℥xxx. Sumat. stat. Calomel ℈i.; et superbibat paululum mist. Camph. in aqua tepida. Admoveantur empl. epispast. validum. abdomini et thoraci; sinapismi pedibus, et arena calida brachiis.

Half-past seven A. M. His pulse ceased at the wrist a few minutes after last report. Only two or three ounces of dark-coloured blood could be procured from his arm. He vomited a large quantity of serous fluid, mixed with white flakes; immediately after which, another scruple of calomel, a drachm of laudanum, two drachms of tincture of cardamoms, and some warm water, were given to him, which remained on his stomach. Features much collapsed. No pain, even in the abdomen on pressure; extremities cold; no pulse at the wrist or temples.—℞. Calomel gr. v.; Tinct. Cardamomi ʒiij.; Aquæ tepidæ ℥ij. Misce fiat haust. Stat. sumend. et repetend, quaque semi-hora. ℞. Infus. Sennæ ℥vj.; Ol. Ricini ℥i.; Tinct. Cardamomi ʒij. Misce fiat enema stat. injiciend.

Two P. M. The enema brought away nothing except a lumbricus. He has taken the calomel and tincture of cardamoms nearly every half-hour. No pulse at the wrist or temples; skin very cold.—Omit med. Habeat infus. Piper. Nigri pro potu.

18th. Six A. M. Has taken nothing since last report except a little pepper-water. Features still much collapsed; pulse just perceptible at the wrist; skin a little warmer. The blister has begun to take effect. Had several watery brownish stools during the night, and made water freely this morning. Has just now had a very scanty stool of thick mucus, tinged with blood.—℞. Ol. Ricini ij.; Aquæ tepidæ ℥xij. Misce fiat enema stat. injiciend.

Six P.M. The enema came away a few minutes after it was administered, and brought nothing along with it. Has had no other evacuation since last report. Features still considerably collapsed; pulse somewhat improved; skin warmer.—Habeat aquam oryzæ pro potu.

19th. Six P. M. Slept a good deal last night, and has continued easy all day. Had two grey-coloured evacuations last night, and two dark green rather consistent evacuations this forenoon. The blister has risen a little. Pulse and features improved; extremities rather cold.—℞. Infus. Quassiæ ℥ij.; Tinct. Cardamomi ʒij. Misce, ter in die sumend.

20th, mane. Has had one dark greenish-coloured stool since last report. Slept well during the night. Features much improved; pulse natural; skin warm; mouth slightly affected by the calomel.

21st. Convalescent.

Darwar; 17th June, 1826.

CASE IV. Vyapoory, æt. twenty, sepoy 5th regiment N. I. Has been in hospital since the 15th instant, with an ulcer on the leg.

Two P. M. Reported to the dresser about half an hour ago that he had vomited two or three times a large quantity of white watery fluid; but that, excepting weakness, nothing else was the matter with him. His illness had not even attracted the notice of the other patients in the ward. Pulse already imperceptible at the wrist; features collapsed; extremities cold; no perspiration. Has taken fifty minims of laudanum.—Sumat. stat. Calomel ℈i., et superbibat. Tinct. Cardamomi ℥ss. in paululum Aquæ Piperit. tepidæ. Admoveantur empl. epispast. validum. abdomini. sinapismi pedibus et arena calida brachiis.

18th. Six A. M. In addition to the medicines prescribed above, he took ten grains of compound extract of colocynth yesterday evening. His pulse began to be perceptible last night at ten o'clock, and is now just perceptible at the wrist. Skin a little warmer. Had two watery yellow stools yesterday evening.—℞. Calomel, Extract. Colocynth. comp. āā gr. x. Misce. ft. bolus stat sumend. et superbibat Tinct. Cardamomi ℥ss. in paul. aquæ tepidæ.

Six P. M. Has had five or six yellow watery stools since he took the calomel and colocynth. The blister has not yet taken effect. Pulse much improved; skin warmer.—Habeat aquam oryzæ tepidam pro potu ad libitum.

19th. Six A. M. Slept pretty well during the night. No evacuation since last report. Complains only of weakness. Features much improved; pulse tolerably good; skin warm.—Sumat Infus. Quassiæ ℥ij. ter in die.

20th. Convalescent.

Darwar; 23d August, 1826.

CASE V. Muddry Mootoo, male convict, æt. forty-five, was brought into hospital this morning with a bowel complaint.

Half-past five P. M. He reported to the dresser, about an hour ago, that he had vomited once, and had been purged two or three times since the morning. Evacuations white and watery. A blister was immediately applied to his abdomen, sinapisms to his legs and feet, and hot sand to his arms. A scruple of calomel was given to him, and was washed down with a little tincture of cardamoms and warm water; but was retained a very short time. Another scruple was therefore given, with thirty-five drops of laudanum. At present, features collapsed; skin very cold, dry; pulse small; tongue covered with a white coating, complains of no pain or uneasiness; intellect clear.—Emitt. sanguinis e brachio ℥xxx. ℞. Calomel. ℈ij.; Extract. Colocynth. comp. gr. x. Misce, fiat bolus stat. sumend. et superbibat Tinct. Cardamomi ℥ss. in aquæ tepidæ ℥ij.

Half-past six P. M. About ten ounces of dark-coloured blood streaked with red have been procured. Continues quiet. Suffers no pain; complains of thirst. Pulse scarcely perceptible at the wrist; breathing slow, and scarcely perceptible; no vomiting or purging.—℞. Ol. Ricini ℥ij.; Tinct. Cardamomi ℥ss.; Aquæ tepidæ ℥xij. Misce, fiat enema stat. injiciend. Habeat aquam oryzæ ad libitum.

Half-past ten P. M. Thirteen ounces of blood were procured; it has separated into serum and crassamentum, the latter of which continues dark coloured. Had two copious white watery stools, after having had the enema. Skin cold; pulse indistinctly perceptible at the wrist.—Rep. Enema. ℞. Tinct. Cardamomi ℥ss.; Aquæ tepidæ ℥i. Misce, omni hora sumend.

Half-past eleven P. M. Has vomited a quantity of white watery fluid. Skin very cold, and somewhat moist; pulse thready; complains of thirst.—℞. Calomel ℈i. et superbibat Tinct. Opii gtt xxv. in aqua tepida.

24th. Seven A. M. Has had two watery dark-grey coloured stools. Skin cold and dry; pulse just perceptible at the wrist; no pain; intellect clear. The blister has not taken effect, but occasions a burning sensation.—Admoveatur sinapism. pectori. Rep. enema.

25th. Seven A. M. Had one yellow watery stool yesterday, and one nearly natural stool this morning. The blister has risen pretty well. Pulse natural; tongue cleaner; no thirst.

26th. Convalescent.

Darwar; 3d September, 1826.

Case VI. Beema, male convict, æt. eighteen. Ten A. M. Was brought into hospital at eight o'clock. He reports that, when working on the roads yesterday, he vomited two or three times. In the evening he ate a little rice, and slept pretty well last night. Had several watery stools this morning, and, when brought to hospital, had no pulse at the wrist. Skin very cold; features collapsed; breath cold. No pain or uneasiness; is very weak; speaks distinctly; intellect clear. Has taken two scruples of calomel, half an ounce of tincture of cardamoms, and some warm water. A strong blister has been applied to the abdomen and chest; sinapisms to his legs and feet; and hot sand is constantly applied to his arms.—Affigantur hirudin. xvj. temporibus. Sumat stat. Extract. Colocynth. comp. gr. ix. et superbib. Tinct Cardamomi ℥ss. in paululo aquæ tepidæ. ℞. Tinct. Opii gtt. xxx.; Tinct. Cardamomi ℥ss.; Aquæ tepidæ ℥ii. Misce, omni hora summend. Aqua oryzæ pro potu.

Twelve, noon. Has taken one dose of laudanum and tincture of cardamoms. Fourteen leeches have adhered to his temples. Complains of pain from the sinapisms. No pulse; skin cold; no perspiration; intellect perfectly clear; voice weak.—℞. Infus. Piper. Nigri ℥x.; Ol. Ricini ℥ij. Misce, fiat enema statim injiciendum.

Five P. M. Has had two clysters, which came away without any thing else shortly after the last was injected. No other medicine has been given. The leeches appear to have drawn about twelve ounces of blood, which, after having stood about two hours, is black, fluid, of the consistence of honey, without having separated any serum. Pulse perceptible at the wrist, 130, very small. Complains of a burning sensation from the sinapisms and blister. Voice fuller; skin cool; no perspiration.—℞. Infus. Sennæ comp. ℥iv.; Tinct. Rhei ʒij. Misce, stat. sumend. Contin. arena calida et aquæ oryzæ.

4th. Seven A. M. Has had a copious turbid watery evacuation this morning, consisting partly of some of the enema. Complains only of the blister, which has risen a little. Countenance much improved; pulse pretty full; skin natural; tongue furred, brown. The blood which was drawn by the leeches continues black and fluid.—Habeat aquam oryzæ ad libitum.

5th, mane. Had one thin yellow feculent stool yesterday forenoon. The blister rose pretty well. Pulse ninety, pretty full; tongue furred, brown in the middle; skin natural.—Sumat stat. Ol. Ricini ℥i.

6th. Convalescent.

Darwar; 8th September, 1826.

Case VII. Yellah, male convict, æt. forty-five. Half-past six A. M. Has just been brought to hospital. Reports that he vomited once or twice yesterday when at work on the roads, and was purged two or three times; but that he eat his dinner, and slept pretty well during the night. He vomited again this morning. Features much collapsed; skin deadly cold; no pulse; is extremely weak; voice weak; breath cold; is perfectly sensible; and complains only of thirst; mouth moist, with a good deal of mucous; no perspiration.—Sumat. stat. Calomel ℈ij. et superbibat Tinct. Cardamomi ʒss. et Tinct. Opii ʒi. in paululo aquæ tepidæ. Admoveantur empl. epispast. abdomini et pectori, sinapismi pedibus et arena calida brachiis. Affigantur hirudin. xxx. temporibus. Habeat aquam oryzæ calidam pro potu.

Nine A. M. No alteration. Has not vomited or been purged since last report. Intellect clear. Complains of thirst, and of burning from the cataplasms.—℞. Submur. Hydrarg. Extract. Colocynth. comp. āā gr. x. Misce, fiat bolus s. a. et superbibat Tinct. Cardamomi ʒss. in paul. aquæ tepidæ. ℞. Ol. Ricini ℥ij.; Tinct. Cardamomi ℥ss.; Aquæ tepidæ ℥xij. Misce, fiat enema statim injiciend.

Eleven A. M. Retained the enema about a quarter of an hour, when it brought away a quantity of serous fluid and white flakes; no vomiting; thirst continues; pulse very indistinctly perceptible at the wrist, stops occasionally for a few seconds, and is again renewed. The leeches have dropped off, after having drawn about twelve ounces of blood, which is black, mixed with a few red spots and streaks, and is of the consistence of liquid honey.—Rep. Hirudin. xx. ℞. Tinct. Cardamomi ℥ss.; Aquæ tepidæ ℥ij. Misce, omni hora sumend.

Five P. M. Has had two white watery stools since last report. Complains only of the pain from the blister and cataplasms; pulse not perceptible at the wrist; thirst less. About ten ounces more blood have been procured, which is watery, of a black colour, with a dash of red.—℞. Infus. Sennæ comp. ℥iij.; Tinct. Rhei ℥ss.; Cardamomi ℥ss. M. stat. sumend. Rep. Hirudin. xx.

About ten or twelve ounces of black fluid blood were drawn by the leeches. The patient continued without any suffering, and died at ten P. M.

Dissection. Abdomen: Great venous congestion in the mesentery, stomach, and intestines; the mesenteric veins being much distended, and their ramifications traceable over the intestines, which were thus rendered of a purple colour. Stomach much contracted, and contained a small quantity of turbid serous fluid mixed with white flakes: its mucous membrane exhibited numerous purple spots, and was lined with a whitish viscid substance. The small intestines, thin and much distended, contained a large quantity of grey fluid mixed with grey or white flakes, and several lumbrici. Their mucous membrane was thin, easily lacerated; in some places white, in others pinkish, and in others purple coloured. Large intestines contracted, except a part of the ascending colon, which was very much distended; they contained a considerable quantity of a purulent like matter, and their mucous membrane was in some places of a deep purple, in others white, or of a pinkish colour. Spleen soft, flabby, and *containing not a drop of blood.* Liver healthy, with very dark-coloured blood in its large veins. Gall-bladder distended with healthy bile. Urinary bladder contracted: its mucous membrane exhibited traces of venous congestion, and was lined with viscid white mucous matter, which also lined the ureters.

Thorax: Extensive pleuritic adhesions; much venous congestion in the lungs; a good deal of white froth in the trachea and bronchia; their mucous membrane lined with a diaphanous mucus. A small quantity of blood in both sides of the heart.

Head: Meningeal veins loaded with black blood. Drops of black blood issued from the divided surfaces of the brain. Much congestion in the upper part of the spinal marrow.

Observations. I have never in any case observed so much venous congestion as in this. None of the morbid appearances in the viscera in this case can be attributed to inflammation, but solely to venous congestion; the turgid mesenteric veins being in many places traceable to the purple patches on the intestines. An interesting circumstance in this dissection is the total want of blood in the spleen, which must be attributed to the great determination of the blood from all the other parts of the body towards the mucous system, the seat of increased action. It necessarily happens that the liver is also generally the seat of great congestion; for through it must all the blood pass from the stomach and intestines in its return to the heart.

The following four cases, taken from the Report published by Mr. Scot, under the superintendence of the Madras Medical Board, are good examples of the catarrhal cholera, and exhibit some of the characteristic phenomena of the disease.

Case VIII.* Mootein, sepoy, admitted 23d October, ten o'clock A.M.; æt. twenty-seven, rather of a robust habit of body. Was seized, about eight hours ago, with violent vomiting and purging of a watery nature; when he was brought to hospital, his pulse was not to be felt at the wrist; skin covered with a cold clammy sweat; complains of a burning sensation about his stomach; intense thirst; tongue dry, and a little furred; great prostration of strength.—Submurias Hydrarg. gr. xvi., washed down with equal parts of hot brandy and water; hot bricks to his extremities, and to be well covered with cumlies.

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* By Assistant-Surgeon Wilson, 2d bat. 23d regt., Madras, Oct. 1818.

Eleven o'clock. Has had two watery stools.—Continue the hot bricks, and the brandy and water, to allay his intense thirst; let him have a clyster, combined with two scruples of laudanum immediately.

Twelve o'clock. A return of vomiting; one watery stool; skin a little warmer; pulse not to be felt. The clyster was ejected without doing any good.—Continue as before.

Two o'clock P.M. No alteration.—Repeat the calomel; continue the hot applications, and the brandy and water.

Six o'clock. No return of vomiting; still watery purging; in other respects the same.

Nine o'clock. At his urgent request, being a Christian, his friends were prevailed upon, without my knowledge, to send for a clergyman, to administer the sacrament to him, previous to death, which he conceived to be inevitable.

Half-past nine. I observed, for the first time, the diaphragm and muscles of respiration acting very laboriously, with great apparent difficulty in breathing. I ordered immediately a strong liquid blister to his chest, and took away, with great difficulty, twenty ounces of blood from his arm: the blood was of the darkest colour, and very thick. Ten minutes after the bleeding, his pulse was feebly felt at the wrist, but his countenance of a much livelier appearance, and he thinks himself much better.—Continue the brandy and water, and hot applications as before.

Twelve o'clock. A large bilious stool, of a most offensive nature; skin warmer; pulse rising.—One o'clock. Left him asleep.

24th. Six o'clock A.M. Slept for nearly four hours: has had two more stools of the same nature; pulse rising fast; skin warm; thirst abating; feels hungry.—Let him have arrowroot, with a little port wine in it, for breakfast.

Ten A.M. Doing well.—Capiat statim misturæ purgant, ℥ij.

Five P.M. The purgative gave him four stools; the three first of a bilious nature, but the last nearly natural.

Eight P.M. Improved.—Capiat Submur. Hydrarg. gr. iv.; Pulv. Antimon. gr. ij.; Opii gr. i.; Conserv. Rosa q. s. M. et fiat pilul. ij. statim sumend.

25th. Passed a good night.

26th. Convalescent.—Port wine and nourishing diet.

31st. Discharged.

CASE IX. Neucanah, sepoy, admitted 12th October, four P.M.; æt. twenty, of a robust habit of body. Was seized, while on duty this morning, with vomiting and purging of a glairy matter almost colourless. When he was brought to the hospital, his pulse was not to be felt at the wrist; extremities cold, and his skin covered with a clammy sweat; eyes sunk; complains of deafness, and great difficulty in breathing; tongue dry and furred; intense thirst.—Submur. Hydrarg. gr. xvi.; Pulv. Antimon. gr. ij.; Opii gr. jss.; Conserv. Roa. q. s. M. et fiat bolus. Let him have an anodyne enema immediately, hot applications to his extremities, and equal parts of hot brandy and water to be given, when called for.

Six o'clock. No return of vomiting; the enema was ejected in the course of four minutes after it was thrown up, without affording any relief; two stools of a watery nature; complains of very great difficulty in breathing.—Twenty ounces of blood were taken from his arm with great difficulty; it was of the darkest colour, and thicker than any blood I ever saw drawn from a vein before. Immediately after the bleeding he breathed much easier, and his pulse at the wrist could be faintly felt; skin a little warmer.—Let sinapisms be applied to his extremities, and his body be well rubbed with hot salt, and the brandy and water be continued.

Eight o'clock. One large bilious stool, which afforded him great relief. Breathing completely relieved, from the bleeding; pulse rising.—Mist. purg. ℥iij.

13th. Passed a good night; has had several bilious stools. His only complaint now is that of great prostration of strength.—Nourishing diet, and four glasses of port wine during the day.—14th. Free from complaint.

15th. Capiat mistura purgant ℥iij.—18th. Discharged.

Case X. Captain G. D., æt. thirty-four, of a robust habit of body, was brought to my quarters on Monday morning, who informed me that, the day previous, he had been seized, about eleven o'clock, with vomiting and purging of a watery nature; that he vomited three or four times, and was purged as often; that he felt himself much better about two in the afternoon; at night he went his rounds, being on guard at the fort. On his return, he states himself to have been in a state of perspiration, when he drank a tumbler of cold water; after which he was seized with incessant vomiting and purging, which continued until his arrival at my quarters. Immediately after my seeing him he had one watery stool, with a great inclination to vomit, and incessant craving for cold water, in consequence of violent thirst and burning sensation about the stomach; tongue dry and furred; pulse not to be felt at the wrist; extremities cold, and his whole body covered with a cold clammy sweat; countenance expressive of great despondency. A careful examination of the region of the liver took place; no complaint on pressure of that organ. He was immediately undressed, and put into my warm bed, which I quitted on his arrival, and covered over with blankets; bottles of hot water to his extremities. At this period there was not any appearance of spasms, nor could he recollect having suffered any pain during the preceding day.—℞. Submurias Hydrarg. gr. xvij. statim sumendus; postea Tinct. Opii ʒij., and a claret glass of hot brandy and water. The medicine remained on his stomach about an hour and a half, during which time he was supplied with hot brandy and water to allay his thirst; at this period part of it was disgorged.—Continued the hot fomentations to his extremities.

Ten o'clock. Pulse felt at the wrist, small and slow; extremities rather warmer; has had another watery stool.—Let him have an enema with two drachms of laudanum. The enema was ejected in the course of five minutes, without producing any good effect. No inclination to sleep, but thinks himself rather better.

Eleven o'clock. Capiat statim Submur. Hydrarg. gr. x. From eleven until two, appears improving; watery purging still continues.

Half-past two, had a return of sickness.

Four o'clock. Sickness of stomach entirely left him, but still watery stools, without any appearance of bile or fecal matter.—Capiat statim Submurias Hydr. gr. vi.; Extract. Colocynth. comp. gr. vi.; Pulv. Antimonialis gr. ij.; Conserv. Rosæ q. s. M. ut fiat bolus.

No alteration from four until six; has had another watery evacuation.

Six o'clock. Spasms appeared in the abdominal muscles, when a large blister was immediately applied to the part. The spasms increasing, called in Mr. Surgeon Davies, when it was agreed to take blood from the arm, which was done to the extent of forty ounces, with great difficulty, from the thickness of the blood, notwithstanding a large orifice had been made. Threw up another injection. He feels himself relieved from the loss of blood; pulse rising, skin more natural.—Calomel gr. v. statim.

From this period until eleven o'clock, no alteration; constantly complaining of great thirst, which was relieved by small quantities of brandy and water; no prostration of strength since the attack.

Eleven o'clock P. M. Complains of restlessness, and appears very despondent. From the dormant state of the liver, it was agreed to endeavour to assist the operation of the calomel by a brisk cathartic, and gamboge was thought most likely to remain on his stomach; four grains of which were accordingly given, and retained, but without the desired effect.

Three o'clock. Gave him three grains of calomel, and an enema of Pulv. Ipecac. ʒii.; Magnes. Vitriolat. ℥i.; Congee water ℥xv., which was ejected, after being retained for a few minutes.

Five o'clock. Countenance expressive of great mental agony; conceives himself beyond all hopes of recovery.

Six o'clock, no alteration in his evacuations; skin still moist, and the stomach retains all the medicines. Blister rose well; pulse very feeble. Pulv. Jalap. gr. xxv. to be taken in a little jelly.

Ten o'clock. Remains the same; no alteration in his evacuations; agree, if possible, to effect a change by mercurial frictions, combined with camphor, on his thighs and arms, every two hours; and one grain and a half of calomel to be taken every hour, in a little jelly; which was continued, until his decease.

Eleven o'clock A. M. The pulse began to sink, extremities clammy; hot bricks, warm applications, and frictions, applied; and he was supported with small quantities of brandy and water. From twelve until two, he took warm congee and tea, and slept a little; appears rather better.

He continued in the same state until nine o'clock, during which period he was supported with soup and hot brandy and water; half-past nine he started from his bed, had a convulsive spasm, and instantly expired.

Dissection. I examined the body in the presence of Mr. Surgeon Davies. The liver appeared sound, but of a paler colour than usual, the gall-bladder was much distended with bile, of the consistence and colour of tar; the spleen and pancreas quite healthy; the stomach empty, and of a natural appearance; the intestines, particularly the duodenum throughout their internal structure, were lined with bilious matter, nearly of the same colour and consistence as that of the gall-bladder, which adhered firmly to their villous coats; no appearance of fecal matter in any part of the canal; the urinary organs sound, and the bladder empty; no appearance of inflammation in any of the viscera of the abdomen. On examination of the thorax, the heart and pericardium were found in a sound state; the lungs were completely distended with blood of the darkest colour; the left lobe, to all appearance, must have ceased performing its functions some hours previous to death; the right was nearly in the same state, except a small portion, which appeared nearly in a natural condition. On examination of the head, there was not any appearance of a determination of blood to that organ; and, after a careful dissection of the brain, there did not appear any fluid in the ventricles, or any other appearance of disease.

CASE XI.* John Burnes, private, October 28th, complains, eight P. M., of vomiting and purging, attended with severe spasms of the lower extremities; great prostration of strength; skin cold; pulse small and rapid; eyes dull and heavy; uneasiness of the epigastric region; says he was attacked with the above symptoms in barracks a few hours after his return from Madras. He is ordered immediately of laudanum 120 drops, tincture of capsicums, two drachms; spirits, three ounces; fomentations to the abdomen, heated sand and bottles with warm water, to the extremities; spirits and water, and ginger tea, for drink.

The spasms abated considerably for nearly an hour, and the vomiting and purging ceased for the same time, when, at ten A. M., the spasms and other symptoms returned with increased severity; the former extending to the thorax and upper extremities, affecting his breathing and hearing, and he appeared to labour under excessive sufferings. The abstraction of twenty-five ounces of blood from the arm was productive of immediate and permanent relief from the spasms, and other painful symptoms. He is now ordered the following draught, and, after it, twenty grains of calomel, and to be repeated as occasion may require. Tinct. Opii gtts. 130; Tinct. Capsic. ʒi.; Spts. Æther. Vit. ʒi.; Spt. Tin. ℥iij. ft. h. Fomentations, &c. to be continued.

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* Garrison-Surgeon M'CABE, Poonamalee, October 1818.

29th. He had a tolerably quiet night, and it was not found necessary to repeat the draught. At nine A.M. he vomited some yellow bilious matter, and had a small stool of the same appearance.—He is ordered twenty grains of calomel instantly, with Aq. Menth. ℥j.; Tinct. Opii, Spt. Æth. Vit. āā gtt. xl.

Two P.M. Stomach settled; complains of giddiness and thirst; no motion; urine free.—Inf. Sennæ comp. ℥iv.; Tinct. Cardam. ʒiv.; Tinct. Jalapæ ʒiij. statim sumendus.

Six P.M. Three copious motions. Says he feels his body all over sore, and a stiffness in his legs and hands.—He is ordered the following: Calomel, Camphor, āā gr. iv. h. s.; Mist. Camph., Aquæ Menth. āā ℥jss.; Tinct. Opii, Spt. Æther. Vit. āā ʒi. fiat h. s. s.

30th. He had a good night; complains only of a soreness of his breast and limbs.—Repet. Mist. Aper. Cont. Pil.

31st. Going on well. Cont. medic.

Cases of the Mixed Form of Cholera.

Darwar; 12th July, 1826.

CASE XII. Lieutenant S. had for some time been labouring under a derangement of his stomach and bowels, having occasionally slight nausea and diarrhœa. This complaint had been removed, and he was sufficiently well to attend to his various duties. When out in the middle of the day, in his palankeen, he became rather suddenly sick, and vomited what he had eaten at breakfast, and also a little bile. He considered this to be merely a return of his stomach complaint, and at the house of a friend he took forty drops of laudanum, which checked the vomiting. When he returned home, the vomiting recommenced with violence, and was accompanied with purging; he sent for me immediately. Before I arrived he had vomited very often, and had been purged above twelve times. At first he vomited a large quantity of bile, but when I saw him he was vomiting transparent and nearly colourless serum; his stools were copious, watery, at first bilious, afterwards nearly colourless. When I first saw him, at one P.M., he complained of a sinking at his stomach, pain in his abdomen on pressure, thirst, and parched mouth, and two or three times of spasms in the muscles of his neck and calves of his legs; his features were considerably collapsed, pulse at the wrist thready, skin warm. Sixty drops of laudanum were given to him in a little warm water; two veins were opened in his arm, and, with considerable difficulty, about fourteen ounces of rather dark-coloured blood were obtained; a large blister was applied to his abdomen, and cataplasms of mustard and capsicums to his feet. The laudanum was retained about a quarter of an hour, when vomiting recommenced. A scruple of calomel was then given, and was washed down with one drachm of æther, thirty drops of laudanum, and some warm water; warm barley-water was given to him occasionally.

After the bleeding, his pulse improved a little; he retained the medicine and barley-water; and by four o'clock there was a great improvement, the vomiting and purging having ceased, and the spasms having been entirely removed. He took no more medicine, and I left him with directions that he should only have some barley-water, with a little white wine.

I saw him again at seven o'clock, when he told me he had perspired a good deal, and now felt perfectly easy. He had a feculent evacuation next morning, his mouth became slightly affected by the calomel, and he speedily recovered.

Observations. In this case the bilious vomiting, pain in the abdomen, thirst, parched tongue, and spasms, clearly shew that there was inflammation of the gastro-enteric mucous membrane. The collapsed features, small pulse, great discharges of serum by vomiting and stool, prove that the action of the secretory vessels of the gastro-enteric mucous membrane was increased. The indications of cure were evidently, first, to repress the vomiting, in order to enable the other medicines to remain on the stomach; secondly, to diminish the increased and to support the healthy action of the gastro-enteric mucous membrane; thirdly, to restore the circulation towards the surface. The first was effected by means of the laudanum and æther; the second, by means of the bleeding, calomel, and laudanum, assisted by all the other remedies; the third, by means of the blister and sinapisms, by the general stimulating property of the calomel, and evidently also by the venesection.

An abstract of ninety-four cases of the disease is given by Mr. Mouat, in his Memoir on Cholera, in the third volume of the Transactions of the Physical Society of Calcutta; but as many of them belong to the low form of the disease, and as we have only to do with the mixed form at present, I will select some cases of the latter as examples, and in the author's own words.

Names.	When admitted.	When sent to hospital.	State of disease on admission.	Remedies employed.	Remarks.
John Casey	17th, 10 P.M.	11 P.M.	Seized with pain in epigastrium; vomiting, but no purging; pulse quick; skin hot; cramps occasionally.	Bled to twenty ounces; calomel in scruple doses; blister to epigastrium; magnesia for the vomiting; friction; afterwards small doses of antimony, calomel, and purgatives.	Convalescent.
Henry Cavanaugh	17th, 5 A.M	8 A.M.	Vomiting and purging; pulse feeble; skin hot; countenance a little altered, and great thirst.	Bled to thirty oz.; scruple doses of calomel; afterwards purgatives.	Discharged well.
Christopher Travesick	17th, 4 P.M.	5 P.M.	Bilious vomiting; frequent watery stools; anxious, restless, faint; pain at the epigastrium; great thirst, pulse quick, and sinking fast.	Bled to twenty oz.; scruple doses of calomel, with laudanum; afterwards calomel, antimony, and purgatives.	Discharged well.
James Watts	20th	2½ P.M.	Vomiting of watery bilious fluid; purging; pain at præcordium and belly; restlessness, anxious and faint, sinking, pulse feeble.	Scruple doses of calomel; blister to the scrobiculus cordis; magnesia for the vomiting; frictions; afterwards purgatives.	Discharged well.

Names.	When admitted.	When sent to hospital.	State of disease on admission.	Remedies employed.	Remarks.
John Shell	27th, 8 P.M.	10 P.M.	Seized with severe vomiting of bilious matter, succeeded by watery stools; oppressed, very low, and dejected; pulse feeble; severe cramps in legs and thighs; cold sweats, skin clammy; pain and heaviness at the epigastrium.	Small doses of calomel, with opium; frictions; anodyne enemas; stimulating draughts; blister to the epigastrium; brandy, and sago.	Doing well.
John Rickett	28th, 8 A.M	9 A.M.	Seized with vomiting, succeeded by bilious purging; severe cramps in legs; griping pain about the epigastrium; eyes red and heavy; skin cold and damp; great thirst; pulse feeble.	Blister to the scrobiculus cordus; large doses of calomel, with opium; anodyne enemas.	Convalescent.
Matthew Darlow	28th, 6 P.M.	8 P.M.	Purging; vomiting of bilious matter; pain at the stomach; pulse quick; great restlessness.	Bled twice; scruple doses of calomel, with opium.	Convalescent.
Richard Kemp	10 A.M.	11 A.M.	Seized with pain in belly, succeeded by vomiting and purging of watery fluid; eyes heavy and dull; pulse quick; skin hot; excessive thirst; cramps in legs.	Bled to twenty oz.; scruple doses of calomel; fomentations; magnesia for the vomiting, and afterwards gentle purgatives.	Convalescent.

Cases of Inflammatory Cholera.

Nellore; 16*th May*, 1823.

CASE I. — Burns, gunner, æt. thirty-five, is a sober man, and has enjoyed very good health since he left St. Thomas's Mount.

Four P.M. Was exposed a good deal to the sun to-day. About two hours ago he was attacked with vomiting and purging of a green bilious matter. Complains of severe pain and burning at the epigastrium, spasmodic pains in his bowels, and intense thirst; severe spasms occur, at short intervals, in the calves of his legs; pulse 100, full, and hard; tongue furred, dry; skin warm; countenance anxious.—Emittantur sanguinise brachio ℥xxiv. ℞. Calomel ℈i.; Opii gr. i. Misce, fiat bolus statim sumend. ℞. Tinct. Opii ℥ss.; Ol. Olivar. ℥i. Misce fiat embrocatio qua perfricetur abdomen.

17th, mane. Was much relieved by bleeding; no vomiting or purging since last report; the pain and burning at the epigastrium, and the spasms, gradually ceased. Had a small green-coloured stool this morning, and complains of pain in his bowels; pulse natural; tongue furred.—Sumat statim Sulphatis Magnes. ℥i. The salts operated freely, and he got completely rid of the complaint: it was succeeded, however, by a diarrhœa, which soon yielded to opium and ipecacuanha.

Coduganoor; 17*th May*, 1823.

Case II. —Harris, gunner, æt. forty. Half-past two P.M. Exposed himself a good deal to the sun this forenoon. Was attacked, about half an hour ago, with purging, which he says was at first feculent, afterwards watery, bilious, and slimy; complains of severe pain and burning at the epigastrium, spasmodic pain in his bowels, intense thirst, and nausea; no vomiting; violent spasms occur occasionally in his extremities, and sometimes in his back; pulse 100, full, and hard; countenance anxious, and expressive of great pain; tongue furred, dry; skin hot and dry.—Emitt. sanguinise brachio ℥xxxvi. ℞. Calomel ℈i.; Opii gr. i. Misce, fiat bolus statim sumend. ℞. Tinct. Opii ʒss.; Ol. Oliva. ℥i. Misce, fiat embrocatio qua perfricetur abdomen.

Six P.M. He was almost immediately relieved by the bleeding; complains now only of weakness and thirst; is perspiring.—Habeat aquam oryzæ tepidam pro potu.

On the 18th he had slight dysenteric symptoms, which however were easily removed, and he soon recovered.

COLLECTANEA.

Floriferis ut apes in saltibus omnia libant,
Omnia nos, itidem, depascimur aurea dicta.

PHYSIOLOGY.

Memoir on the Functions of the Encephalon, including a brief Notice of most of the recent Doctrines.

M. Rolando considers that his experiments have proved that the medulla oblongata is the centre of sensibility, the focus and source of life. Treviranus regards it as the centre of animal life, at least. Fodera deems it to be the "hypomoclion" or under lever of life. It is, according to him, the main exciter of respiration, circulation, digestion, and of voluntary motion; the influence which it exerts, proceeding in an especial degree from the point whence the pneumogastric nerves arise; this point is the line of demarcation between the medulla oblongata and spinalis. The portion of the medulla situated below this point serves only to transmit impressions received; and the portion of the medulla oblongata situated above this point, is not the source of any influence, nor the centre of any action. The brain and cerebellum are only appendages to the medulla oblongata; and all irregularities of the sentient and moving powers which are observed in diseased states of the mass of the encephalon are referrible to sympathetic derangements in the functions of the medulla oblongata; for this latter part is invariably the only real and true seat of palsy. According to M. Serres, the whole encephalon is endowed with sensibility, but the medulla oblongata is the principal seat of it. M. Flourens places the source or centre of vitality, and of the nervous power, in the medulla oblongata.

All other parts of the nervous system, he says, are dependant on it. If the medulla be divided below the point at which the pneumogastric nerves arise, it dies, and the encephalic mass remains alive; if the section be made above this point, the very reverse ensues. Hence this point is termed by him the vital knot, the central bond of the nervous system, the base of the nervous tree, the encephalon representing the trunk, and the spinal cord and nerves, the roots of it. Respiration altogether depends primarily upon it; and it is not less indispensable for voluntary motion.

To none of these doctrines do we subscribe; the source and centre of life do not reside in, nor depend upon, any special organ, or set of organs, but each part is endued with vitality, and this vitality is a result of its organization. Neither animal nor organic life has an exclusive centre of influence or acting power; and, therefore, sensibility in its widest acceptation has no special, or particular seat. Every system, nay, every part of any, and more especially of the nervous system, has in fact an independent existence or vitality, and hence we cannot admit to any part exclusively what some authors have called "primordiality of action." Before we proceed further in our account of the functions of the medulla oblongata, let us determine what is the precise portion of the nervous system to which that term is to be applied. The older anatomists, and the most celebrated modern ones, include not only the rachidian bulb, or tail of the medulla oblongata, but also, the tuber annulare, and the crura cerebri et cerebelli; but we object to this classification; and, while we are inclined to restrict the appellation to the rachidian bulb, and the ganglions which it comprehends, viz. the pneumogastric, olivary or vocal, the acoustic or auditory, and the gustatory or trifacial ganglions, we annex to them the optic and olfactory bodies or lobules, which have usually been considered as belonging to the cerebrum. The reasons of our disjoining the tuber and the crura cerebri and cerebelli are that their organization, their mode of development, and their relative bulk, as well as the results of experiments upon them, do not agree with the structure, growth, or functions of the medulla; whereas, in these very particulars, there is a striking resemblance between the optic and olfactory lobules, on the one hand, and the rachidian bulb on the other; and we have therefore associated them together. The medulla oblongata, as thus defined, is, as it were, superadded to the spinal marrow, and the functions of the one are analogous to, but are more complicated and more perfect than those of the other; and again, it is subordinate, alike in organization, position, and complexity of function, to the other parts of the encephalic mass. The medulla oblongata is to the organs of special sense what the spinal cord is to the organs of general sensation and locomotion, (the skin and ordinary muscular apparatus.) The former, viz. the organs of the four special senses, are provided not only with ganglionic nerves (for the purposes of organic or nutritive life) and nerves of general sensation and of general muscular motion, but also with two sets of particular or superadded nerves; the one being destined to transmit peculiar impressions from the organ to the nervous centre; the other, to receive the motive or existative influence from this centre, and to convey it to the organ. Now with these nerves of special sensation are associated certain peculiar or proper motor nerves; thus the hypoglossal is associated with the lingual, the third and fourth pairs, the ophthalmic of Willis, and the 6th pair, with the optic; and the facial with the auditory. The sense of smell does not require any general movement, and its muscular apparatus or appendages are imperfect; it is therefore not provided with a special or proper motor nerve, but is supplied with twigs from the facial and trifacial nerves. The relation which we have thus pointed out to exist between the auditory and facial nerves, co-operating simultaneously for the same function, although in a different mode, and the consideration of the mutual relative development of these two nerves, shew us the error of those who have regarded them as quite unconnected with, and independent of each other. In the same manner, the pneumogastric nerve, on the one hand, and the spinal on the other, are in reality only two parts of the same nervous apparatus; the one consisting of sensitive filaments, and the other of motive filaments; co-operating with this apparatus, are other cords of filaments, sensitive as well as motor, which proceed from different parts; these cords are the glosso-pharyngeal, the hypoglossal, the phrenic, and the intercostals. The first phenomena, or set of actions, which follow any impression made on an organ of sense, and transmitted along its nerve to its respective ganglion, whether of the medulla oblongata, or spinalis, take place in the locomotive, or muscular apparatus with which the organ affected is more especially associated, certain movements occur, and for the purpose either of defending it from the too powerful impression of the external agent, or of better accommodating and arranging it, for such an impression; thus, in the case of the eye, or of the ear, the first movements which follow a noise, or strong light, are certain automatic and involuntary actions of the muscles subservient to the organs of vision, or of hearing: the object of which actions is either to mitigate, or to increase and concentrate the external impressions. Now these actions are under the influence solely of the medulla oblongata: but the perception of the impressions belongs to the brain, and to the brain alone; for the brain is the organ of the faculty which wills, and of the faculty which perceives and judges. We are therefore not to regard the medulla oblongata and spinalis as the seat of special and general sensation; they are, so to speak, points of transition, or organs intermediate between the external part on which the impression is made, and the brain, which perceives the impression: the function of the medulla being rather to excite a train of movements (those of general locomotion), destined to withdraw the individual organ, or to approximate it to the external agent, or, at other times, to modify and alter the condition of the organ itself; in short, to determine and regulate those special actions which are necessary to the accomplishment of the functions of sense.

MM. Majendie, Dumeril, and Serres, suppose that the trigeminal nerve is fundamentally the real nerve of all the special senses; that it bestows, by a mode of influence which we do not understand, the special sensibility on the optic, olfactory, auditory, and gustatory nerves; and that frequently, especially in the lower animals, it takes the place, and exercises the functions of these nerves. The following are the chief arguments adduced in favour of these opinions. 1. In the mole, there is no optic nerve, but, instead of it, there is a twig of the fifth pair; in fishes, there is no auditory nerve; in the cetacea, no olfactory nerve; and yet these animals have in all probability a certain degree of the corresponding sensations. 2. When the fifth pair is divided, all the special senses are destroyed, or at least enfeebled; when the special nerves alone are divided, the animal still retains in part the capability of perceiving odours, tastes, sounds, and light; but if the fifth pair is divided at the same time, these sensations are utterly and entirely annihilated. 3. Certain of the special sensations may be produced in other ways than the contact or impression of their ordinary stimuli; thus, for example, sound may be heard although the external ear be plugged up, if a watch be applied to the head, or put between the teeth. 4. The occurrence of amaurosis, anosmia, and ageustia, from neuralgia of the trigeminal nerve. In answer to these arguments, we may state that division of the fifth pair does not immediately and instanter destroy any of the special senses; that a certain interval elapses, and during this interval, certain changes have taken place in the texture of the parts on which the nerve was distributed; thus, in regard to the eye, the cornea becomes opaque, the conjunctiva inflamed, and the humours muddy; the same results follow any injury or disease affecting this nerve: very different, however, is the effect of the division of the optic nerve; the sight is gone instantaneously and for ever. As to hearing the ticking of a watch, when put between the teeth, it is easily explicable on the well-known laws which regulate the transmission of sonorous vibrations; in a similar manner can we understand that those animals which have no external ear, as seals, moles, fishes, &c., may yet have the sense of hearing. And again, can we not hear the noise of our own voices, even when the ears are firmly plugged, and excluded from any atmospheric inpulsions on the tympanum? We readily admit, that the fifth pair is intimately connected with the functions of the four special nerves; but this connexion is indirect, and arises from the trigeminal being the nerve of general sensibility, and of common mobility to the hand and face; and when it is destroyed, or disused, certain morbid changes take place in the organization of the structures which are dependent upon it. But let not our readers be deceived, and suppose that these organic changes which ensue, are a proof that the trigeminal nerve has any direct influence upon the circulation, absorption, exhalation, and secretions of the organs, either in a state of health, or of disease: all these functions, and all morbid states of them, such as inflammation, ulceration, œdema, &c. are dependent upon, and regulated by, the great sympathetic nerve, which we know to be connected by several twigs with the fifth pair. The only direct result of the injury of the fifth pair, is the loss of common sensibility in the exterior surface of the eye and face, palsy of the muscles of the face and tongue, and an immobility of the eye. It is curious that any lesion of the great sympathetic, even in the neck, is followed by inflammation, dulness, and atrophy of the eyes; in short, by all the consequences of an injury of the fifth pair itself.

Tiedemann observes that the great sympathetic, by the influence which it has on the general phenomenon of nutrition, and therefore on the organic condition of parts, and on the functions of these parts, such as the secretion of the humours of the eye, and of the mucus of the nose, must necessarily exert a great control over the phenomena of sensation, more especially of smelling and of sight. We have said above, that Majendie and others assert that the mole has no optic nerve; Carus and Geoffry St. Hilaire, however, are of a different opinion, and state that this animal has at least the orbitary portion of the nerve, that it is of the size of a hair, and is united to the ophthalmic branch of the fifth pair, to form with it the retina. This is still a disputed question; and, although Hilaire supposes that the functions of any of the sensorial nerves are never transposed to, nor performed vicariously by, another nerve or nerves, yet we cannot deny, that in the invertebral animals, and even in some families of the vertebral ones, the divisions of the trigeminal nerve appear to supply the place, and perform the duties of the proper nerves of sense. In those animals which have no olfactory or gustatory nerve, or in which they have been cut, the probability is, that the sensation which belong to these special nerves are reduced to the phenomena of ordinary and general feeling, or sensibility. There may be, quite possibly, a certain positive action of light on the minute and pulpy twigs of the fifth pair in the eye: for light must be regarded as a species of matter, and must therefore make an impression, however weak, and almost unappreciable, on a sentient part; but this impression is only a modification of the general phenomena of touch. The transformation, therefore, of nerves of general sensibility, into nerves of special sensation, is to be regarded as erroneous and unsatisfactory. Bell and Shaw have pointed out the many fallacies into which Majendie has been led, by confounding the phenomena of special, with those of common sensibility; and Eschricht has lately published a suite of experiments which are at utter variance with the conclusions of the French physiologist. —*Medico-Chirurgical Review.*

Case of a Cyst containing a Human Fœtus, in the Mesentery of a Boy. [From Baron DUPUYTREN's Lectures.]

THE visceral hydatids developed in the cavity of the pelvis may be confounded with a crowd of tumors too numerous to name, and which, moreover, have been repeatedly studied. But there is one especially deserving attention from its extreme curiosity, and which has been described in a periodical, now difficult to be procured, namely, the "Recueil des Mémoires de la Faculté de Médecine de Paris," and entitled case of a "cyst containing a human fœtus developed in the mesentery of a boy of fourteen."

"AMÉDÉE BISSIEU, son of M. Bissieu, of Vernueuil, department de l'Eure, was born in 1790, of a young, well-formed, healthy woman, who had previously borne another child, well-formed and of good constitution. On the night during which his mother supposes he was conceived, one of the alarms then so frequent in France threw the town into violent agitation, and called the inhabitants tumultuously to arms. During her pregnancy, Madame Bissieu experienced some mental afflictions, as well as frequent indispositions; nevertheless her labour was propitious. It was supposed that during labour an unusual quantity of water escaped through the vagina. Immediately after birth the infant was confided to a nurse, who finding him weakly and unhealthy, almost despaired of bringing him up. Returned to his father's house, he complained, from his first lisp, of pain in the left side of the chest and belly. The volume of these parts was so considerable that it was feared he laboured under organic disease; but the size was, nevertheless, so variable, that nothing was done beyond accommodating his clothes to these variations. However, as he grew up these fears subsided, but the boy's body continued thin; he continually complained of slight pains in the side; his appetite was fantastic and irregular, and he frequently suffered from indigestion. On dressing him one day it was perceived that two of his left ribs were more elevated and prominent than the others; but this was attributed to the effects of a habit he had contracted of sucking the right thumb, and inclining his body to that side. Still less attention was excited by the circumstance, as at this time the lad was distinguished for a degree of gaiety, vivacity, and intelligence, beyond his age. He was sent to a boarding-school at Rouen, where, having spent eighteen months, he was suddenly attacked, on the 13th Nivose, year twelve, with acute pain in the side and left hypochondrium, with continued fever, with exacerbations, and a feeling of oppression. Great swelling of the pelvic region also occurred. He was bled and purged. The fever continued, and the swelling made progress. On the seventh day of his illness, M. Blanche, the surgeon, perceived distinctly in the abdomen, a hard and very painful tumor extending along the false ribs to the crest of the ilium, rounded from side to side, and of the size of a large melon. Calming treatment was employed, but the pain did not diminish until an abundant purging of fœtid purulent matter had taken place. The marasmus, however, proceeded, and, after some months' useless treatment he was sent home. On his arrival, MM. Guerin and Bertin Desmardelles recognised the tumor. A continual cough soon occurred, accompanied by purulent and fœtid expectoration, and a purging of matter also fœtid, in the midst of which, six weeks before his death, was found a parcel of hairs rolled up on themselves. He died on the 23d Prairial, an. 12, six months after the attack at Rouen.

"*Autopsy.* The opening of the body took place next day, in the presence of MM. Guerin and Bertin Desmardelles. These physicians discovered in the left hypochondrium, below the spleen, a large, thick, membranous sac, adhering to all the surrounding parts, and especially to one of the large intestines, which they presumed to be the colon; and in this cyst, amidst purulent, thick, and yellow matter, two masses were of nearly equal volume, situated transversely before the vertebral column, one applied to the other, but, nevertheless, quite distinct. Of these two masses, one placed inferiorly, was composed of a large handful of tangled felted hair; around this were two little parcels of hair, like what passed by stool six weeks before death. The other mass, situated higher, consisted of an oblong, fleshy, and bony substance, covered with skin. At one of its extremities was seen an imperfect head, with hair, teeth, a deformed nose, a kind of orbit at one side, and an ear at the other. At the opposite extremity was a limb-like appendage, ending in some tongue-shaped points armed with nails. Lastly, from the centre of the mass proceeded a thick, short ligament, inserted into the parietes of the cyst."

"Deeming the case deserving of more minute researches, MM. Guerin and Desmardelles lifted the fleshy mass out of the pelvis, and took it away, together with the stomach, spleen, and a part of the large intestine. They ascertained, then, that there existed no trace of sexual conformation, external or internal, and that the sex of Amadée Bissieux was indisputably masculine. Lastly, they found, on dissecting the rest of the body, that the liver was very voluminous, and the lungs whitish and infiltrated with pus. Twenty-two days after this, the body was exhumed, in order to verify the facts now related. MM. Delzeuzes and Bronard, who were charged with the investigation, found no trace of any sexual organ but those belonging to the male. The bladder was cautiously separated, the vesiculæ seminales discovered; the rectum examined internally and externally, and nothing extraordinary found. Lastly, the external parts of generation were carefully inspected, and the testicles, vasa deferentia, and penis, were found to be perfect in formation, but small in size."

"*Remarks on the Case.* A fact so extraordinary excited universal attention, and M. Planche forwarded the preparation to the Faculty of Medicine of Paris, and I (said M. Dupuytren) was commissioned to report on this great anomaly in the laws of nature.

"The first fact I ascertained relative to the position of the fœtus, was, that it lay in a cyst of the transverse mesocolon, which had only communicated very recently with the intestine, through the destruction of a partition by which they were separated. In continuing this examination, I ascertained that the organized mass contained in the transverse mesocolon had many points of resemblance to a fœtus, but that it offered also numerous peculiar dispositions, some of which depended essentially on vices of conformation, while others appeared to be dependent on changes of form successively effected by time and the sojourn of the mass in the mesocolic cyst. The dissection of the mass was, however, the surest mode of determining the nature of this production. I did so with great care, and I discovered the trace of some organs of the senses, a brain, spinal chord, very voluminous nerves, muscles degenerated into a sort of fibrous matter, a skeleton, composed of a vertebral column, a head, a pelvis, and the rudiments of almost all the limbs. Lastly, in an umbilical chord, very short, and inserted into the transverse mesocolon, beyond the cavity of the intestine, an artery and vein ramified in each of their extremities in the fœtus, and the individual to which it belonged.

"The existence of these organs sufficed certainly to establish the individuality of this organized mass, although in other respects it was destitute of organs of digestion, of respiration, of the secretion of urine, and of generation. But the absence of these parts, at most, could only render it one of the monstrous fœtuses destined to perish at the moment of birth.

"We shall not dwell on suppositions, more or less problematical, advanced respecting the presence of this fœtus in the body of the young Bissieu. We shall only remark, that it is by no means rare to see twins born adhering by the back, belly, head, or by several parts at once. A degree of compression, more or less strong, exercised by the mother's organs on the soft embryos, either during conception or soon after it, may produce these monstrosities. In other cases, not extremely rare, the twins are so identified, that many organs are deficient in each, and are replaced by common organs, which serve for the existence of both individuals. In the first case, the montrosity depends on a mechanical cause, in the second it depends on a primary fault in the organization of the germs. One of these explanations being admitted, the sex of the individual who so long acted the mother to the fœtus in question, becomes altogether indifferent. The fœtus has progressed, but as extra-uterine conceptions do. In fact, to whatever part the fecundated germs are attached, their mode of nutrition is the same. They derive from all, by means of proper vessels, the nutritive fluids they require. They are developed, and increase in size, until the time ordained by nature for their expulsion, and if they cannot then be expelled, they putrefy and turn into adipocire; they dry, and become ossified, or else they vegetate until their presence, by irritating the adjoining parts, determines the formation of abscesses, and procures their discharge. Such is what seems to have happened in the case before us.

"To ascertain the degree of importance of this phenomenon, its exact cause should first be known, and then this importance would be determined by the light thrown on the natural process, and occasional irregularities of the process of generation. However, putting these considerations aside, the case docs not the less merit our attention, from its rarity and interesting phenomena.—*Lancet.*

INTELLIGENCE.

PRIZE ESSAYS *proposed by the Medical Reform Association. For the Three best Essays on the following Subject, three Prizes are offered.*

Subject. "On the present State of the Medical Science and Practice[*] in the United Kingdom, and the most advisable and efficient mode of promoting the advancement and improvement of both in all these branches."

For the *best* essay will be awarded the sum of 50*l.* sterling.

For the *second*, the sum of 30*l.*

For the *third*, the sum of 20*l.*

Conditions. 1. The competition is open to *all* persons, whether of the medical profession or not, and the award will be made in *public.*

2. The essays are to be written in the English, French, or Latin languages, and these only.

3. They must be transmitted to Dr. Epps, 89, Great Russell street, Bloomsbury, London, on or before the 1st day of March, 1834.

4. They must be clearly and neatly written, and *not* in the handwriting of the authors.

5. Each essay is to bear a motto, and to be accompanied by a sealed letter, with a corresponding motto to that inscribed upon the essay. Within the sealed letter there must be the name and place of residence of the author.

6. None of the letters will be opened but those connected with the mottos of the successful essays; and the unsuccessful essays will be delivered, upon satisfactory reference, by Dr. EPPS, the honorary secretary. The prize essays will be returned to their accredited authors, who may, if they think proper, publish them for their own advantage; or otherwise they will be published by the Association.

Signed, by order of the Association,
JOHN EPPS, M.D., *Honorary Secretary.*

N.B. One hundred pounds, the amount of the three prizes, are already lodged with the treasurer, JOSEPH HUME, Esq. M.P., who, with the other judges, will publicly deliver the several sums, as they shall be awarded to the successful candidates. The names of the other adjudicators will be published at a future and not distant period.—J. E.

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[*] These comprise Medical Statistics.

OBITUARY.

Died, on the 22d of July, at his house, in Upper Brook street, Grosvenor square, in his sixty-third year, **Anthony Montonnier Hawkins**, Esq. M.D. By his family and a large circle of friends, who knew how to estimate his merits and the excellent qualities of his heart, his loss will be long and deeply deplored.

APOTHECARIES' HALL.

Names of Gentlemen to each of whom the Court of Examiners have granted Certificates:

August 1.	August 15.
John Barwick, Ambleside	William Brown, Bradley, Staffordshire
David Bolton, Bilston	Richard Edward Davies, Minories, London
James Culham, London	John Gray, London
George Pyke Dowling, Bristol	John Williams Knight
Henry Inuston Gould, Rochester	Samuel Collins Turner, Frampton on Severn
Collpitts Harrison, Bishop Wearmouth	**August 22.**
Charles Johnston, Birmingham	Francis Manisty, Northumberland.
Thomas Prowse, Bristol	
Henry Smythe, Brandon, Suffolk	

METEOROLOGICAL REGISTER,

By Messrs. Harris and Co., Mathematical Instrument Makers, 50, High Holborn.

			Thermometer.			Barometer.		De Luc's Hygrometer		Winds.		Atmospheric Variation.		
July	Moon.	Rain gauge.	9 a.m.	max.	min.	9 a.m.	10 p.m.	9 a.m.	10 p.m.	9 a.m.	10 p.m.	9 a.m.	2 p.m.	10 p.m.
20			68	71	53	29.41	29.43	61	60	NW	NW	fine	cloudy	cloudy
21			62	66	54	.49	.52	60	63	NW	W	cloudy		
22			60	67	58	.52	.47	65	65	WSW	W	rain	fine	fine
23	☽	.14	62	68	52	.50	.64	67	66	W	NW	showery	cloudy	fine
24		.05	65	67	55	.80	.93	65	64	NW	NW		fine	fine
25			65	70	55	30.03	30.03	64	62	NW	NW			
26			65	68	64	.05	29.99	62	64	NW	WNW			
27			71	79	56	.02	30.02	64	64	WNW	N			
28			62	77	60	.02	.02	64	64	ESE	SE			
29			69	79	57	.05	.11	64	62	SE	ESE			
30			57	70	54	.15	.21	62	63	ENE	NE	cloudy		
31	○		60	69	57	.13	.08	64	63	NE	NE	fine		
Aug.														
1			61	68	55	.12	.12	62	64	EN E	NE			
2			60	64	55	.10	.06	64	63	N	E ENE	cloudy		cloudy
3			62	66	50	.04	.18	63	60	NE	NE			fine
4			59	65	57	.02	29.93	60	61	NE	NNE	fine		
5			63	66	58	29.84	.88	39	59	NW	ENE			rain
6		.09	60	65	49	.91	.91	59	58	ENE	ENE			fine
7			60	66	55	.86	.81	58	58	NE	ESE			
8	☾		63	70	60	.81	.83	58	59	SE	ESE			
9			67	73	58	.77	.76	59	53	W	WNW			
10			65	69	60	.76	.71	58	58	NW	NW		cloudy	
11			[illegible]	70	51	.81	.85	59	60	NNW			fine	
12			[illegible]	[illegible]	55	.92	.81	60	58	E				cloudy
13			[illegible]	[illegible]	[illegible]	.56	.44	58	61	WNW	NNW	cloudy		
14			63	[illegible]	[illegible]	.40	.47	63	62	ENE	NNE	fine		fine
15	●		60	66	55	.50	.52	60	59	NE	NW	cloudy	cloudy	
16			63	65	54	.56	.64	59	60	NW	NE	fine		cloudy
17			61	66	58	.65	.59	60	57	W	N		fine	fine
18			64	67	55	.47	.53	61	67	W	NW	cloudy	cloudy	
19		.12	63	68	58	.57	.64	65	63	NW	NW	cloudy	fine	

The quantity of Rain fallen in July, was 1 inch and 84-100ths.

The Subscribers to the London Medical and Physical Journal are respectfully informed, that a Title-page *and* Index *to the three last numbers of the work under the above title will be printed, and may be had of the Publisher, on the 1st of October, when* Part I. *of the* Medical Quarterly Review *will appear, price 5s.*